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Budgeting and Acquisition Business Process Reform

07 November 2007

by

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This report serves three purposes. Our first purpose is to assess the future of the Planning, Programming, Budgeting and Execution System (PPBES) and related budget reforms and to suggest that it may take more that a marginal adjustment to the current PPBES process to plan and budget most effectively for national defense and weapons acquisition. In this regard, we recommend that the DOD, and the federal government as a whole, adopt a capital budgeting process. The second purpose is to review and assess previous acquisition reforms in DOD, many of which continue into the present. The third purpose is to assess modification of the current acquisition process to improve the business processes imbedded within this system as well as to make the overall process operate more efficiently.

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Abstract

This report serves three purposes. Our first purpose is to assess the future of the Planning, Programming, Budgeting and Execution System (PPBES) and related budget reforms and to suggest that it may take more that a marginal adjustment to the current PPBES process to plan and budget most effectively for national defense and weapons acquisition. In this regard, we recommend that the DOD, and the federal government as a whole, adopt a capital budgeting process. The second purpose is to review and assess previous acquisition reforms in DOD, many of which continue into the present. The third purpose is to assess modification of the current acquisition process to improve the business processes imbedded within this system, as well as to make the overall process operate more efficiently.

Keywords: PPBES, Budget Reform, Capital Budgeting Process, Acquisition Reform

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Executive Summary

Numerous reforms since the 1950s have attempted to improve the defense acquisition process, and almost all of these have included some form of resource management changes, large and small, intended to improve how the Department of Defenses (DOD) buys weapons, weapons platforms and equipment. Recent reforms—including more open competition, streamlined acquisition procedures, elimination of obsolete regulations and more effective program management—are some of the substantial changes made in DOD in the last fifteen years to improve acquisition management. The establishment of more open competition for DOD business is a significant part of recent acquisition transformation initiatives. Changes in acquisition information technology resulting from the passage of the *Clinger-Cohen Act* and other legislation by Congress, the use of cost as an independent variable as a means of reducing acquisition costs, plus the push toward spiral acquisition are other changes that have been intended to yield positive results. Observing this trend, one understands that resource management and acquisition reform are constantly in progress in DOD. Also, the researchers understand that change sometimes is the result of internally driven management initiatives, while in other cases it results from action by Congress and in the Executive branch.

This report serves three purposes. Our first purpose is to assess the future of PPBES and related budget reforms and to suggest that it may take more that a marginal adjustment to the current PPBES process to plan and budget most effectively for national defense and weapons acquisition. In this regard, we recommend that DOD, and the federal government as a whole, adopt a capital budgeting process. The second purpose is to review and assess previous acquisition reforms in DOD, many of which continue into the present. The third purpose is to assess modification of the current acquisition process to improve the business processes imbedded within this system, as well as to make the overall process operate more efficiently.

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Reform of PPBES and Defense Budgeting for Acquisition: Where to Next?

PPBES changes have created a combined two-year program and budget-review decision cycle (but not a biennial budget), with a complete review in year one, followed by limited incremental review in year two. This change in cycle from a full-program review and a full-budget review each year to a combined review with a comprehensive review happening every other year was meant to reduce the inefficiencies of unnecessary re-making of program decisions; the program should drive the budget rather than the opposite. With the programming and budgeting cycles operating contemporaneously, decisions should be made more effectively, whether they are made in the off- or on-year. Changes made in each off-year cycle are intended to come into effect more quickly by compressing the programming and budgeting cycles, while still preserving the decisions made in the on-year cycle through the off-year by limiting reconsideration of decisions to only the most necessary updates. In essence, decisions flow from the *Quadrennial Defense Review* and other studies; then, a structure is erected in the *Strategic and Joint Planning Guidance* that provides direction for the remaining years of a Presidential term.

The processes summarized above will remain in place, in theory, to best assimilate and adapt DOD financial management and budgeting to dramatic changes in worldwide threat and, correspondingly, defense capability requirements. Year-to-year changes in the program structure and budget, then, are made only to adjust to incremental fact-of-life changes. Also, this new process will situate the Secretary of Defense in the decision environment at an earlier stage than in the old PPBS process; it put him “in the driver’s seat,” in the words of one DOD official. Decisions under the reformed PPBES are intended to reach the Secretary while options are still open, and while important and large-scale changes still can be proposed—before the final decision has become a foregone conclusion at the

military department and service level. When the Defense Secretary's input came at the end of the stream of decisions, some changes that could have been made were pre-empted because they would have caused too much "breakage" in other programs. This problem persists; and, as indicated in this report, this is only one of many business practice problems that need to be reassessed and changed to improve national defense resourcing. A goal of this report is to assess whether significant changes in DOD financial processes are warranted, and if so, what future change options should be considered.

Up to this point in time, under former Secretary Rumsfeld and continuing under Defense Secretary Gates and his successors (presumably), a number of changes have been implemented to varying degrees. These changes were intended to improve the manner in which the PPBES serves as a decision system for DOD to better integrate financial decisions with acquisition decision-making. The researchers conclude that this linkage has been strengthened somewhat, although not enough, through program review by the JCS (J8)—where all DOD acquisition programs now are reviewed for jointness, capability and feasibility.

With respect to budget formulation (as opposed to execution), we might wonder what would happen to DOD resource decision-making if the POM were eliminated and replaced by a process of longer-term budgeting. In traditional budgeting, budget submitting offices (BSOs) have to answer several important questions as they ascertain what they need in the budget and as they justify their requests to funding sources. These questions include "what," "why," "when," "where," and "how." The answer to "how much" flows from the answers to the prior questions. All of these questions are important, but possibly the two most important questions in this set are the "what" and "why" questions. They set the stage for the fact-finding that causes answers to the "how," "where," and "when" questions to surface.

For example, if there is no need for a ship or a tank, then there is no need to define when you might need it, where you might need it, or how it might be

configured or delivered. Budget decisions are based on this interrogative pattern. Much academic research has focused on the concept of incrementalism, i.e., that budgets change only by small amounts on the margin and not much as a percentage of the total from one year to the next. This is a tested analytic finding, but not one that is useful for the PPBES decision-makers because they do not build budgets by focusing on percent of change. Rather, they first determine what it is they need (capability and requirement). They do this by analyzing the world around them and its impact on the organization and its systems. They then establish what is needed to improve or operate more efficiently or effectively than in the previous planning period or fiscal year. Finally, they evaluate in detail what this will cost and what can be executed in the annual budget.

With the implementation of the PPBS in 1964 under Robert McNamara, the defense budget system split the focus of these questions into three parts. The planning and programming functions (in which the SPG and POM are built) deal with the “what” and “why” questions, and to some extent “where” and “when.” Most of what is left for the budget process is the task of answering the question, “how much this year?” Still, budget formulators do have to present their fully justified budget to reviewers in the DOD, the OMB, and Congress. This means that they have to convey the part of the POM that answers the “how” and “what” questions, along with the request for “how much.” To do this, budget offices have to put back together the pieces of the program that are built in different places for different purposes by different sponsors. Asking what the best profile for the ingredients for an aircraft carrier battle group over the next ten years (a planning and programming question) is different from asking how much is needed to operate the battle group for the next year. However, in PPBES, to decide ”how much,” the budgeters have to know what the total program will look like in practice.

As long as there is clear articulation and separation of these processes and one feeds carefully into the other, this system can work—as long as the POM feeds information into the budget process. For the most part, budgeters may have been

happy to have many of the big resource questions decided for them, leaving them to focus on pricing-out next year's needs. For their part, programmers have developed rules that allowed them to develop a good POM for each cycle. Usually, this means everyone gets something, but no one gets everything they want.

With the passage of time, dysfunctions appeared in this scenario. First, the military departments created POMs that were more conducive to their needs than to joint warfighting needs. The *Goldwater-Nichols Act* reforms (1986) were intended to rectify this situation. Then, with the drawdown after the fall of the Soviet Union, budget offices were placed in the awkward position of having to make decisions because the calendar said it was time to do so—even when the POM had not been completed—because those who built the POM could not decide which was the best way to downsize while maintaining the capacity to deter or fight future wars. Military department and DOD budget offices were, by and large, unhappy at having to make programmatic drawdown decisions in this situation. However, now in the past few years, the program decision-making process has not been completed in time to meet the needs of the budget part of the process.

Most recently, this is allegedly due to the combined program- and budget-review process under the PPBES. Also, various changes have been made to the processes of planning and programming for weapons acquisition, but none has been fully successful. Part of the problem is the overly complicated programming and budgeting process. Former Secretary of Defense Rumsfeld and others have characterized the PPBES process as too slow and too complicated. As part of his transformation effort, Rumsfeld and his DOD staff changed PPBES so that the programming and budgeting analysis and decision phases could be roughly concurrent. The POM process begins first, but both the budget and the POM process are supposed to end at the same time. In effect, the failure of the programming system to reach decisions may be viewed as having broken the budget process.

In reality, the budget process can only reach the “how much” question by answering the ”what” and “why” questions. If the answers to these questions all appear at the same time, or are not answered at all, then the budget process has to, in effect, duplicate what is supposed to be done in the POM process to produce a budget on time. Indeed, under the new PPBES process, some parts of the budget process have had to operate as if there was no POM process.

This leads to the question: is there a genuine need to prepare a POM, especially if budgeting is done on a longer-term basis of two to five years? Perhaps it would be useful to take the transformational PPBES reform one step further and discard the separate POM process by simply incorporating the POM questions and POM process outputs into the budget process? This may be a more sizeable task than it appears due to the existence of a bureaucracy which produces the POM. A first response is that participants in this bureaucracy might resist, fearing their loss of jobs. On the other hand, this is perhaps a less sizeable task than it seems because the military staff members involved in the POM process have other career lines and can perform functions as warfighters and/or players in the defense-acquisition process or the warfare-requirements-setting system. There would be some civilian positions, mainly those in the Pentagon, that would disappear in this new integrated POM/budget cycle—a cycle that could perhaps be called the planning, budgeting and execution system (PBES). Despite this problem, replacement of the entire PPBE system with longer-range budgeting is the option we prefer—primarily because it would restore an orderly and complete analytical process while decreasing some of the repetitiveness and needless rework of the annual budget process.

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Related Budget Reforms

While creating a two-phase planning and budgeting system of the type outlined above would rationalize the operation of PBE within the DOD, an additional useful step would be to create a longer-term appropriation period. DOD fiscal execution patterns are needlessly complicated by the rush to spend one-year appropriations before the close of the fiscal year. And the mixing of different appropriation periods for different appropriations needlessly complicates administration for those who execute budgets.

Most of the DOD budget functions on a multi-year pattern—longer for military construction and procurement of long-lived assets such as ships and aircraft, and shorter for personnel and supporting expenses (O&M). However, even if personnel funding is legally an annual appropriation, in reality the force size and composition is relatively fixed and will remain so until some external crisis event forces review and change. Personnel could as well be a two, three, or even a five-year appropriation. We suggest that the DOD budget is, in effect, a multiple-year budget now. It would make sense to recognize it as such and to appropriate for multiple-year periods for all accounts, and to extend the obligation period for short-term accounts beyond one year at minimum.

A two-year appropriation (or obligation period) for personnel and O&M accounts would be a useful starting point for Congress, as we have noted. Critics of such an approach often point to Congress's need to exercise oversight through the budget. However, Congress can exercise whatever oversight it cares to in various ways—for example, by focusing on execution reviews in off-budget years in a two-year cycle. A two-year budget also would reduce the opportunity for Congress and the President to insert what all recognize as "pork" into defense appropriations. The suggestions we make here would reduce opportunities for pork. Yet, they would also allow for meaningful oversight by Congress and would reduce the size of the

Pentagon bureaucracy, while releasing additional military officers from administrative jobs to return to duty in their warfare specialties.

It must be noted that the task of defense resource planning and budgeting is part managerial and part political. Thus, from our perspective, no amount of budget process, PPBES or business process reform will reconcile the different value systems and funding priorities for national defense and security represented by opposing political parties, nor will it eliminate the budgetary influence of special-interest politics. Value conflict was evident in the early 1980s when public support, combined with strong Presidential will and successful budget strategy, produced unprecedented peacetime growth in the defense budget—in particular, in the investment accounts. Constituent and special-interest pressures make it difficult for Congress and the DOD to realign the defense budget. While we applaud the spirit of many of the changes made in DOD during the period 2001-2005, reform of the defense budgeting process does not mean that producing a budget for national defense politically will be much easier in the future than it has been in the past. Threat perception, capabilities assessment and politics drive the defense budget, not the budgets process itself (McCaffery & Jones, 2004). Additionally, the size of the deficit and rate of increase in mandatory expenditures make top-line financial relief for the DOD unlikely.

We also may observe that a sequence of annual budget increases for national defense in the early and mid-2000s have not brought relief to many accounts within the DOD budget. At the same time, requirements of fighting the War on Terror have intensified the use of DOD assets and the costs of military operations. Because the need for major asset renewal has been postponed for too long, new appropriations have gone and will go in the future largely to pay for new weapons system acquisition and for warfighting against terrorism. What this means is that accounts such as those for Operations and Maintenance for all branches of the armed services will continue to be under pressure and budget instability; restraint will remain a way of life for much of the DOD. This places a heavy burden

on DOD leadership, analysts and resource-process participants to achieve balance in all phases of defense budgeting and resource management.

Ending what we know as programming and the POM would be a major change to PPBES. In our view, programming is only effective, if at all, at the end-game anyway. Yet, preparing and processing the POM wastes huge amounts of valuable DOD staff time and energy that can be put to better use. Also, ideally, the period for obligation of *all* accounts in the new DOD budget process would stretch over a period of two or three years—including fast-spend accounts such as O&M, MILPERS, etc. The reason for multiple-year obligation for all accounts is to enable more effective budget execution and to end the highly wasteful and inefficient end-of-year "spend it or lose it" incentive syndrome. (Some will argue that there would still be a rush to spend at the end of whatever the appropriation period is; for starters, we will gladly accept a 50% improvement if it happens every two years rather than every year). This change would, of course, require the approval of Congress. However, the DOD could implement long-range budgeting (including capital budgeting) as a part of the overall reform—while Congress continues to operate on the annual budget cycle it prefers (for a number of reasons related to serving constituent and member interests). No change in the federal budget process can be made unless it permits Congress to continue to do its business according to the incentives faced by members. To think otherwise is naïve. Still, as noted above, the only part of the reform advocated here that would require explicit congressional action is the lengthened obligation period for all accounts to two or three years, as has been done internationally (in the UK, for example). Indeed, this increased obligation period occurred in the US in a small way in the early 1990s before the elimination of what was termed the "M" account due to illegal use of this account by the Air Force in financing the B-1 bomber and other programs. DOD had substantially greater flexibility in managing money for which the obligation period had expired. Under the M account process, expired funding was allowed to be retained and reallocated by DOD for a period of three years.

The change to extend the obligation period for one-year appropriations to two years would require Congress only to modify certain provisions of appropriation law. Otherwise, the DOD could implement a long-range accrual-based budgeting system on its own, subject to gaining approval of and support for it from Congress—but this would not require change in law. In essence, it is incumbent on the DOD to persuade Congress to support such change, and this will only occur if the DOD is able to show members how they, the DOD and the American taxpayer will be better off as a result of the reform.

Reforms Leading to Capital Budgeting in DoD

If budget reforms are going to be made, management reforms must be made simultaneously to ensure that change is properly implemented and all persons involved are aware of and are willing and able to make the appropriate organizational and process adjustments. This is especially true if one of the reforms is decentralizing part of the decision-making process. Decentralizing the decision-making process should, in our view, involve the use of capital budgeting, in which additional authority for capital asset purchases could be further shifted down to program managers at the military department level. Even though former SECDEF Rumsfeld's requests for "broadened discretionary powers" in the *Defense Transformation Act* (*DTA*) and in other appeals were generally denied by Congress, with the exception of giving DOD authority to develop a new personnel system, many of these ideas had considerable merit (McCaffery & Jones, 2004).

Since federal agencies have much tighter constraints than businesses in the private sector, it is difficult to provide incentives for agencies to better manage their capital assets. However, Congress could adopt policies similar to those in the United Kingdom, Australia and New Zealand and allow departments and agencies, including DOD, to raise and keep revenues from selling or renting out existing assets (President's Commission to Study Capital Budgeting, 1999). Further, as suggested by the DAPA report (2006), Congress and DOD should establish a capital reserve account to improve financial stability for acquisition. If good capital budgeting processes were established in the budget process, and if agencies were allowed to keep revenues from the sale of assets, at least two incentives would exist for agencies to manage their assets well.

If capital budgeting was implemented, the strategic plans of the departments could be more easily and efficiently integrated into both resource management and acquisition decision and execution processes within DOD. Although the *Government Performance and Results Act* (*GPRA*) requires agencies to submit five-

year strategic plans, the plans are currently not used directly in considering appropriation requests for capital assets and spending. Additionally, it would be useful for planning purposes if the strategic plans and budgets were tied to the lifecycles of the capital assets. Although the *Capital Programming Guide* directs agencies to consider lifecycle costs and compare them to expected benefits, the lifecycle costs are not directly linked to the agency's strategic plans. If capital asset lifecycle costs were tied to strategic plans, funding for the maintenance and replacement of assets could be better anticipated. In our opinion, capital budgeting should be done on an accrual basis so that program and budgetary plans would include all future outlays for capital asset acquisition, especially for new weapons systems. If lifecycles are estimated for assets, then the department would commit more explicitly to replacement of obsolete equipment and systems (President's Commission to Study Capital Budgeting, 1999).

In an effort to assist agencies in making decisions on capital asset investments, the agencies should continue to prepare annual financial statements as required by the *CFO Act*. It should be noted, however, that preparation of financial statements simply for *CFO* compliance should not be the goal. The goal should be preparation of financial statements that are used to improve decision-making. In addition, departments and agencies would prepare and use the detailed inventories of existing capital assets required by the *CFO Act*. The information in these reports would be consolidated by DOD and used to guide DOD and the MILDEPS in preparing long-term capital plans, similar to and replacing the FYDP. This would assist Congress in reviewing and assessing these plans.

Most states have separate capital budgets. Analyses of case studies of state capital budgets add fuel to the debate over whether there should be a separate capital budget at the federal level. While there are many critics of a separate capital budget at the federal level, proposals for instituting separate capital acquisition funds (CAF) at the agency level have been advanced and analyzed by the President's Commission to Study Capital Budgeting, as noted above.

In implementation, the separation process would require all federal departments and agencies to prepare and submit to OMB (or in the case of DOD, to submit directly from OSD to Congress) a separate capital budget. Following this, once capital budgets were negotiated between agencies, analyzed and approved by Congress as part of the annual budget process, a segment of the department's appropriations enacted by Congress would be placed in the department's capital acquisition fund and could only be used for acquiring long-lived capital assets. This is the application of capital budgeting that would fit most comfortably into the existing federal budget process.

A more comprehensive approach would be to establish a single capital acquisition fund for the entire federal government as a separate account entity. Under this approach (the agency-based option), a CAF would borrow from the Treasury to buy capital assets, and the Treasury would charge operating units a debt service amount based on an "equitable" rate of interest (e.g., at the federal prime rate, or possibly discounted for internal government borrowing). Additionally, the CAF would inherit all of the agency's existing capital assets in an effort to capture all agency costs of capital.

The argument in support of the CAF approach is that a single fund or multiple separate funds for capital acquisition would help agencies better plan and budget for capital assets. In addition, agencies would be better held accountable for planning and budgeting and, presumably, would be more likely to use their resources efficiently. These funds would also smooth-out the budget authority required by agencies and would help to reduce potential spikes in the budget associated with full-funding requirements. An important aspect of introducing separate capital acquisition funds, however, is the definition of capital assets. OMB would have to issue guidance on what constitutes a capital asset to ensure implementation is consistent throughout the agencies (President's Commission to Study Capital Budgeting, 1999).

While the Government Accountability Office (GAO) originally agreed with and supported the recommendation to implement capital acquisition funds, GAO then published a study concluding that the proposed benefits of CAFs could be achieved through simpler means (GAO, 2005). GAO asserted that CAFs, as a financing mechanism for federal capital assets, would ultimately increase management and oversight responsibilities for the Treasury Department, the Office of Management and Budget (OMB), the Congressional Budget Office (CBO), and the departments and agencies that would utilize CAFs.

While recognizing that CAFs might improve decision-making and remove many of the spikes and troughs in Budget Authority (BA) associated with large-dollar capital assets, GAO noted that some federal agencies now use different approaches to address capital investment planning and decision-making. GAO research on capital-intensive federal agencies, coupled with interviews the agency conducted with officials from Congress, the Treasury, and OMB, led to its conclusion that CAFs, as proposed by the President's Commission to Study Capital Budgeting, would be too complicated for implementation because of the additional budget complexities that they would create. Interviews with executive and congressional officials led GAO to believe that a proposal to institute CAFs, even on a pilot basis, would have few, if any, proponents. Because of these reasons, GAO recommended that the focus should be placed on improvement and widespread implementation of improved asset management and cost-accounting systems to address the problems for which CAFs were proposed as a solution (GAO, 2005).

We regard the GAO criticism of the CAF as correct in that it would be a significant departure from how budgeting for long-lived assets is done presently in the federal government, and that it is not entirely compatible with the current congressional budget process. However, to reject this proposal for this reason is to miss the point about the need for and advantages of capital budgeting. Thus, we believe the GAO analysis, while accurate, misses the point. What we recommend for DOD generally parallels the assessment by President's Commission to Study

Capital Budgeting on what is needed. We assert that the benefits of capital budgets include the following:

- Improved assessment of the condition of existing capital assets,
- Better estimates of the funding needed for maintaining assets,
- More clearly and directly assigned priorities for capital asset investment in a separate capital budget (or budget component).
- Application of better cost information from DOD accounting systems to assist budgeting decisions.
- Investment of funds to achieve necessary improvements in basic DOD transactional and cost-accounting systems so they are capable of fully informing capital planning and budgeting decisions in real-time and in discounted present-value terms.

Our recommendations represent a mix of the methods used by the private sector and are similar to approaches practiced by most US state governments.

To conclude this section of the report, as we have explained, part of the basic business model for asset acquisition to be applied under a reengineered system is a private-sector-oriented capital budgeting process in which asset and financial resource planning are completely integrated into the budget and resource management processes rather than separated (as is the case with existing DOD acquisition and resource management systems) (i.e., PPBES). The new business model would employ a single, fully integrated ERP IT system and database rather the multiple systems and databases that characterize existing DOD systems.

From a managerial perspective, leading the DOD capital budget process and redesigned acquisition process would still be the task of the USD AT&L and the small acquisition staffs of the MILDEPS; it would still require input from combatant commanders to determine the capabilities desired for the warfighting. Capital budgeting would not change or reduce this set of responsibilities.

Under DOD capital budgeting, a prioritized list of desired capabilities would be established under the sole authority delegated to the USD AT&L, under the advice of a small JCS staff, but without the JCIDS process—because, in our view, this process has only added unnecessary complexity to a review and analysis process that was already overcomplicated. We acknowledge that the JCS should perform analysis of interoperability, jointness of asset use, and system compatibility, but this should be done with much less procedural complexity than is present in the JCIDS process. We do not believe JCIDS represents a better way of doing business than the admittedly inefficient process it replaced—or more aptly put—only augmented.

The Secretary of Defense, except symbolically, would not be a player in the reengineered capital budget process and system based on the fact that except in extraordinary instances, he is not a player in the system as it presently functions; according to modern business management theory and principles of delegation of authority and matching responsibility/accountability, the DoD should "let managers manage." Once the prioritized capabilities list was set, the estimated costs (assuming a high degree of uncertainty in many cases, e.g., RDT&E) of acquiring capabilities would be matched up with estimates of the availability of resources with data drawn from the single long-range budgeting system. And, as capital budgeting is performed in the private sector and in many US state governments, a line would be drawn, determined on affordability, at someplace on the list. All assets to be acquired that fell above the line would be contracted for development and RDT&E by the private sector. All assets that fell below the line of affordability would not be started. In terms of how the current acquisition milestone process is organized and operates, we advocate simplifying the process by reducing it to fewer basic stages.

A Review of Process Changes in Weapons Acquisition and Resource Management

Numerous reforms since the 1950s have attempted to improve the defense acquisition process, and almost all of these have included some form of resource-management changes, large and small, intended to improve how DOD buys weapons, weapons platforms and equipment. Recent reforms—including more open competition, streamlined acquisition procedures, elimination of obsolete regulations and more effective program management—are some of the substantial changes made in DOD in the last fifteen years to improve acquisition budgeting and management. The establishment of open competition also is a significant part of recent acquisition transformation initiatives. Changes in acquisition information technology resulting from the passage of the *Clinger-Cohen Act* and other legislation by Congress, the use of cost as an independent variable as a means of reducing acquisition costs, plus the push toward spiral acquisition are other changes that have been intended to yield positive results.

This report reviews a number of the more important procedural, regulatory, and legislative reforms to the defense acquisition process initiated and implemented over roughly the past 15 years. Some of the reforms noted are no longer in use, but have implications for current processes. Even though these changes are no longer under implementation, understanding their intent helps to paint a picture of how the system evolved to where it is today. For example, the *Federal Acquisition Reform Act* (*FARA*) and the *Federal Acquisition Streamlining Act* (*FASA*) have been incorporated into other DOD acquisition administrative law, referred to as instructions by number in DOD, e.g., DOD 5000.2R. In each example of reform, policy decisions and legislation have been intended to address significant acquisition reform problems.

Assessing Past and Continuing Acquisition Reform Initiatives

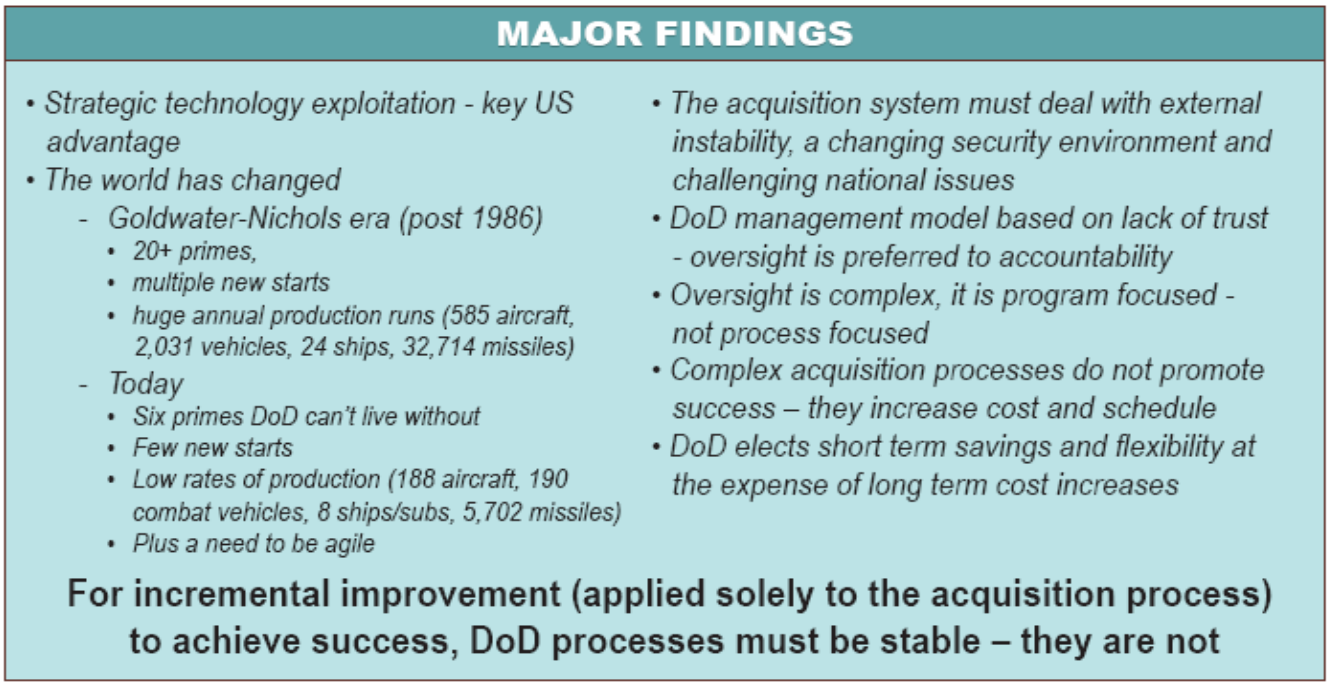
Pervasive problems persist in the process for acquiring defense assets. These problems include affordability, cost control, keeping to schedules, and performance estimating errors. Estimates of weapon program affordability often are based on optimistic assumptions about the maturity and availability of enabling technologies (GAO, 1997). The use of outdated information systems makes the ability to accurately track and measure acquisition costs even more difficult. Thus, weapons acquisition reform is driven by myriad factors and is borne out of the desire to acquire the best weaponry at the least cost. Beyond technical issues, the politics of acquisition are complex and present additional challenges. In summary, continual tension persists between top-level policy and budget process players—including Congress, defense acquisition executives, and mid-level DOD officials (such as program managers and comptrollers)—confronted with limited resources and a complex set of constraints in the form of laws, rules, regulations and guidance.

In assessing acquisition reforms past and present, we must emphasize that the DOD budget is reviewed and appropriated in competition with other priorities. In that respect, the world has changed significantly in the last two decades, as the *Defense Acquisition Performance Assessment* (*DAPA*) report commissioned by Acting Secretary of Defense Gordon England in 2005 concluded:

> The fundamental nature of defense acquisition and the defense industry has changed substantially and irreversibly over the past twenty years […] In 1985, defense programs were conducted in a robust market environment where over 20 fully competent prime contractors competed for multiple new programs each year. The industrial base was supported by huge annual production runs of aircraft (585), combat vehicles (2,031), ships (24) and missiles (32,714). Most important, there were well-known, well-defined threats and stable strategic planning by the Department. Today, the Department relies on six prime contractors that compete for fewer and fewer programs each year. In 2005 reductions in plant capacity have failed to keep pace with reduction in demand for defense systems, (188 aircraft, 190 combat vehicles, 8 ships, and 5,072 missiles). (DAPA Panel, 2006, p. 6)

The Panel's key findings (as summarized in the graphic below) focus on process stability, increased trust, decreased oversight and continued accountability. We offer this only to remind readers that this is a highly complex area in which problems are many and seemingly easy solutions are often ruled out by the necessity for checks and balances between branches of government, the continued need for oversight between government and the private sector, and continuing demands for vigilance in the use of public money. As a result, solutions sometimes are easy to prescribe, but hard to bring about.

Figure 1. Major Findings on Acquisition Reform from the *DAPA*
(DAPA Panel, 2005, p. 5)



The *Federal Acquisition Reform Act*—The *Clinger-Cohen Act*

DOD issued an update to its regulations governing the acquisition of major weapon systems on 13 October 1994. Among other things, the update incorporated new laws and policies (including the *Federal Acquisition Streamlining Act*), separated mandatory policies and procedures from discretionary practices, and reduced the volume and complexity of the regulations. The *Federal Acquisition Streamlining Act* of 1994 (*FASA*) required the SECDEF to define cost, schedule and

performance goals for all of the Major Defense Acquisition Programs (MDAP) and for each phase of their acquisition cycles. Highlights included streamlined proposal information or page count, shortened proposal submission time, reduced evaluation team size or evaluation time, and limited source-selection factors pertaining to cost, past experience, performance, or quality of content. The *FASA* called for full and open competition, to be obtained when, “all responsible sources are permitted to submit sealed bids for competitive proposals" (*Federal Acquisition Regulations*, 2000). Full and open competition is achieved through open specifications (US Code 253a (1) (A)).

The *FASA* establishes a clear preference for acquisition of commercial items in the federal government. It requires agencies to reduce impediments to buying commercial products and to train appropriate personnel in the acquisition of such products. One such impediment is the use of design specifications, which restrict competition and make acquisition of commercial products difficult. Design specifications typically tell a vendor how a product is to be made or how a service is to be performed. A commercial vendor, whose product has been developed for public use, seldom conforms to government design specifications. The *FASA* instilled flexibility and timeliness into the acquisition process.

The major pieces of legislation affecting acquisition and information technology were the *Federal Acquisition Reform Act* (*FARA*) and the *Information Technology Management Reform Act*. While originally passed as two separate initiatives, their impact on each other made it impossible to consider each separately. The two acts were later combined and renamed the *Clinger-Cohen Act* (1996). The major impact on information technology was the repeal of the *Brooks Act* and its associated restriction on acquisition of resources. The *Clinger-Cohen Act* encouraged the acquisition of commercial off-the-shelf (COTS) IT products and allowed the Office of Federal Procurement Policy (OFPP) to conduct pilot programs in federal agencies to test alternative approaches for acquisition of IT resources. The Act directs agencies to use “modular contracting” based on successive acquisitions

of “interoperable increments” (Federal Register, 1996, p. 27). The *Clinger-Cohen Act* created the position of Chief Information Officer for the Department of Defense, and combined lifecycle approvals for weapon systems and information technology systems into a single instruction: the DOD 5000.1 series.

FARA and *FASA* have been overtaken or superseded by other DOD reform initiatives applicable to MDAPs and weapons acquisition. Still, both *FARA* and *FASA* are valid and enforceable. The *FARA*, among many other things, expanded the definition of “commercial items” to include those things not only sold to the general public, but also those *offered* to the general public. These initiatives were pushed by industry, primarily because under the two Acts, firms participating in government acquisitions with qualified “commercial” products are exempted from over 100 statutory and regulatory requirements. For example, firms may be exempted from the *Truth in Negotiations Act* that requires firms to certify cost and pricing data on negotiated actions greater than $550K (Yoder, 2003).

Additional reforms have involved fostering the development of measurable cost, schedule, and performance goals as well as incentives for acquisition personnel to reach those goals. Among other things, program managers (as well as senior DOD and military department officials) now must establish cost, schedule, and performance goals for acquisition programs and annually report on their progress in meeting those goals. They must establish personnel performance incentives linked to the achievement of goals. Program Executive Offices also must submit recommendations for legislation to facilitate the management of acquisition programs and the acquisition workforce.

In this respect, it should be noted that each service has an acquisition executive responsible for acquisition and contracting workforce education and training, among other things. For example, in the Navy, the Director of Acquisition Management (DACM) is responsible for all Navy acquisition career-management issues, both military and civilian, including, but not limited to:

- Promotion parity analysis
- Reservist policies
- Congressional and legislative education/training issues
- Defense Acquisition University mandatory education and training
- Acquisition Workforce Tuition Assistance
- Business and Financial management

Contracting out services has been a major initiative since 2000 under the guidance of the Office of Management and Budget. In 2000, federal agencies procured more than $235 billion in goods and services. Overall, contracting for goods and services accounted for about 24 percent of federal government FY 2001 discretionary resources, and this percentage has remained relatively constant (OMB, 2003; OMB, 2007). About 38 percent of acquisition personnel government-wide are either already eligible to retire or will be eligible by September 30, 2007 (OMB, 2003a). At DOD and DOE—the two largest contracting agencies—39 percent of the acquisition workforce will be eligible to retire by fiscal year 2008 (GAO, 2003). What this means is that the human capital skill mix will change dramatically as retirements proceed and new personnel are hired. In the meantime, new requirements, tasks, and skills are demanded of both old and new acquisition managers as a result of federal and acquisition regulatory reform efforts. A review of some of these changes follows.

Commercial Off-the-shelf Acquisition

The *Federal Acquisition Regulation* (*FAR*) applies to all contracting regulations. The pertinent part of the *FAR* with regard to commercial off-the-shelf reforms (COTS) is Part 12, which indicates (in essence) that federal government organizations should perform market research to maximize the use of commercial products. DOD enforcement of the *FAR* Part 12 over the past five years has caused weapon program managers to evaluate and, where appropriate, purchase commercial or non-developmental items (CNDI), when they are available from

industry, if they meet the organization's needs. Defense contractors are required to incorporate CNDI to the maximum extent possible.

Initial feedback on the success of this initiative is highly positive. It appears that the change has permitted commercial firms to develop the kinds of new products that meet DOD needs. Specifically, firms that developed sophisticated products in significantly less time and at lower cost than their predecessors have been rewarded with contracts. However, to some extent, the quality and credibility of commercial firm cost information available to DOD acquisition decision-makers remains a problem. The long-term lifecycle support costs associated with utilizing potentially rapidly obsolete commercial items has yet to be fully documented (Yoder, 2003).

Cost as an Independent Variable

DOD Directive 5000.1 directed a new development in cost analysis termed "Cost as An Independent Variable," or CAIV. System performance and target costs are to be analyzed on a cost-performance tradeoff basis. The CAIV process is intended to make cost a more significant constraint as a variable in analyses of the effectiveness and suitability of systems. CAIV is intended to reduce acquisition costs. After Desert Storm and before the War on Terror began on September 11, 2001, threats were not increasing in perceived capability at as fast a rate. The DOD acquisition budget decreased accordingly. Under these circumstances, it was more appropriate to make cost a stronger driver in system design due to decreased budgets. Such an approach also was consistent with commercial practices in new system developments, in which market forces drive the price of new systems.

CAIV helps the program manager recognize that the majority of costs are determined early in a program's lifecycle. Consequently, the best time to reduce lifecycle costs is early in the acquisition process. Cost reductions are accomplished through cost and performance tradeoff analysis, which is conducted before an acquisition approach is finalized. Incentives are applied to both government and

industry to achieve the objectives of CAIV. Awards programs and “shared savings” programs are used creatively to encourage generation of cost-saving ideas for all phases of lifecycle costs. Incentive programs target individuals and government and industry teams. The program manager (PM) works closely with the user to achieve proper balance among cost, schedule, and performance while ensuring that systems are both affordable and cost-effective. The PM, together with the user, proposes cost objectives and thresholds for MDA approval, which will then be controlled through the APB process (Lifecycle Costs). The PM searches continually for innovative practices to reduce lifecycle environmental costs and liability.

Research by Coopers and Lybrand identified over 120 regulatory and statutory "cost drivers" that, according to contractors surveyed, increased the price DOD pays for goods and services by 18 percent (Lorell & Graser, 1994). Some of the more egregious cost drivers included government-imposed accounting and reporting standards and systems such as Cost Accounting Standards (CAS) and complex contract requirements and statements of work (SOW) (1994). The basic goal of this study was to develop a more “commercial-type” defense acquisition process. This included reducing regulator burden; transferring more program cost, design and technology control authority and responsibility to the contractor; exploiting commercially developed parts, components, technologies and processes; and making cost/price a key requirement. This study was compatible with the goals of the Revolution in Business Affairs under the Clinton administration and Transformation of Business Affairs under the administration of President George W. Bush.

The Single Process Initiative

In 2002, former Secretary of Defense Donald Rumsfeld directed DOD to change the management and manufacturing requirements of existing contracts to unify them within one facility, where appropriate (LeBrecht, 2002). This initiative is called the block change or single process initiative (SPI). Program managers are tasked with ensuring SPI reduces weapon acquisition costs. Allowing defense

contractors to use a single process in their facilities is a natural progression from the contract-by-contract process of removing military-unique specifications and standards initiated in the *FASA*. Contractors will incur transition costs that equal or exceed savings in the near term. The move to common, facility-wide requirements is intended to reduce government and contractor costs in the long term.

DOD 5000.2R **Transformation from Regulatory to Policy Guidance**

In 2002, Secretary Rumsfeld directed that *DOD 5000.2R* be converted from a regulatory tool to a more functional and flexible policy guidance document. The *5000* Series has, in the past, been regarded as administrative law. It demanded user requirements—including the preparation of operational requirements documents (ORD) and estimation of initial operational capability. The *5000.2R* acquisition requirements had been firm and not subject to modification without specific waivers (Rieg, 2000). However, the SECDEF, the services, and program managers recognized the need for greater flexibility to manage acquisition.

The revised *DOD 5000.2-R* document promised to piggy-back on other acquisition reforms, allowing greater flexibility and control for acquisition leadership. It was revised to recommend that integrated process teams (IPT) be used during program definition to aid the definition of requirements and system supportability. In addition, program structure changes are directed to include an acquisition strategy of open systems. To maximize program effectiveness, the program manager is directed to use commercial sources, risk management, and CAIV. The PM should use program design incorporating integrated product and process development (IPPD) and should place system engineering emphasis on production capability, quality, acquisition logistics, and open system design (Oberndorf & Carney, 1998).

Director of Acquisition Program Initiative

In past practice, annually the Director of Acquisition Program Integration determined if each MDAP had reached 90 percent or more of cost, schedule, and performance parameters when compared to acquisition program baseline

thresholds. The appropriate decision authority must make a similar determination for non-major acquisition programs. If 10 percent or more of program parameters are missed, a timely review is required. The review addresses any breaches in cost, schedule, and performance and recommends suitable action, including termination.

Major acquisition defense program baselines must be coordinated with the DOD Comptroller before approval. Cost parameters are limited to RDT&E, acquisition, acquisition of items procured with operations and maintenance funds, total quantity, and average-unit acquisition cost. As the program progresses through later acquisition phases, acquisition costs are refined based on contractor actual costs from program definition and risk reduction (PDRR), engineering, manufacturing and development, or from initial production lots. Cost, schedule, and performance objectives are used as described above in the cost as an independent variable (CAIV) process to set the Acquisition Program Baselines. Cost, schedule, and performance may be traded-off by the PM within the range between the objective and the threshold without obtaining MDA approval. This initiative intends to improve executive-level oversight and program-management reporting. In addition, it may enhance executive and PM flexibility in the best use of available funding.

A Revised Capital Account Process: Further Support for Capital Budgeting

The 2006 *Quadrennial Defense Review* recommended that DOD establish a capital account for major acquisition programs. This would be a major change for the acquisition process. The recommendation mirrors the outcome of the Defense Acquisition Performance Assessment study directed by Deputy Secretary of Defense Gordon England. In its findings in December, 2005, this study recommended:

> The Secretary of Defense should establish a separate Acquisition Stabilization account to mitigate the tendency to stretch programs due to shortfalls in the Department of Defense non-acquisition accounts that ultimately increases the total cost of programs. This will substantially reduce

> the incidence of “breaking” programs to solve budget year shortfalls and significantly enhance program funding stability. (DAPA Panel, 2005, p. 10)

In effect, the panel recognized that acquisition account leaders could not protect the acquisition accounts from acting as a bank for the operating accounts during budget execution—thus the recommendation that DOD procurement, research and development budget be separated from the overall defense budget. This separation would help prevent the kind of financial whiplash that causes cost overruns, according to retired Air Force Lt. Gen. Ronald Kadish, panel director and a vice president at Booz Allen Hamilton, a prominent defense consulting firm. The panel found that every $1 taken from a program induces $4 of cost increases in later years. “Though many in Washington blame the uncertainty of the annual budget approval process on Congress, most of the damage was self-inflicted by the Pentagon. It is largely a ‘government-induced' instability" (as cited in Ratnam, 2005).

In Secretary England’s confirmation hearings, both the Senate and House Armed Services Committees expressed an interest in improving acquisition practices, an interest that was specified in the conference report on the DOD authorization bill. For example, the Senate report accompanying S1042, the Senate version of the Defense Authorization bill, noted that after nearly twenty years of reform since the *Packard Commission Report* and *Goldwater-Nichols*, “major weapons systems still cost too much and take too long to field.” The committee added, “Funding and requirements instability continue to drive up costs and delay the eventual fielding of new systems. Constant changes in funding and requirements lead to continuous changes in acquisition approaches” (US Senate, 2005, p. 345). This culminated in the recommendations and findings made in the *QDR* in language that went beyond the establishment of a capital account, to include a capital budgeting process:

> To manage the budget allocation process with accountability, an acquisition reform study initiated by the Deputy Secretary of Defense recommended the Department work with the Congress to establish “Capital Accounts” for Major Acquisition Programs. The purpose of capital budgeting is to provide stability in the budgeting system and to establish accountability for acquisition

> programs throughout the hierarchy of program responsibility from the program manager, through the Service Acquisition Executive, the Secretaries of the Military Departments and the Office of the Secretary of Defense. Together, these improvements should enable senior leaders to implement a risk-informed investment strategy reflecting joint warfighting priorities. (DoD, 2006, February, pp. 67-68)

This process would be supported by joint collaboration among the warfighter, acquisition and resource communities, with the warfighters assessing needs and time-frame and the acquisition community contributing technological judgments on technological feasibility and "cost-per-increment" of capability improvement. The budget community's contribution would be an assessment of affordability. These inputs would be provided early in the process, before significant amounts of resources are committed. The *QDR* also recommended that the DOD, "begin to break out its budget according to joint capability areas. Using such a joint capability view—in place of a Military Department or traditional budget category display—should improve the Department's understanding of the balancing of strategic risks and required capability trade-offs associated with particular decisions" (DoD, 2006, February, pp. 67-68). The DOD promised to explore this approach further with Congress. History indicates that Congress clings tenaciously to the appropriation structure currently in place because it serves Congress's purposes, but it is good to remember that all that is now familiar was once new.

It is clear that the defense acquisition process has long been beset by problems related to both politics and efficiency. As stated previously, numerous reforms since the 1950s have attempted to improve the acquisition process. Recent reforms—including more open competition, streamlined acquisition procedures, elimination of obsolete regulations and more effective program management—are some of the substantial changes made in DOD in the last ten years to improve acquisition budgeting and management. The establishment of open competition also is a significant part of recent acquisition transformation initiatives. Changes in acquisition information technology resulting from the passage of the *Clinger-Cohen*

Act and using cost as an independent variable as a means of reducing acquisition costs are other changes expected to yield positive results.

Congressional and DOD reform initiatives have focused on greater reliance on commercial products and processes and more timely infusion of new technology into new or existing systems. Program managers utilize commercial products with an understanding of the complex set of consequences that stem from such use (Oberndorf & Carney, 1998). Solicitation requirements are written to include performance measures. If military specifications are necessary, waivers must first be obtained. Solicitations for new acquisitions that cite military specifications typically encourage bidders to propose alternatives (Secretary of Defense, 2002a). DOD has made significant progress in disposing of the huge inventory of military specifications and standards through cancellation, consolidation, conversion to a guidance handbook, or replacement with a performance specification or non-government standard.

Some reforms already have had unanticipated consequences. For example, the *FARA* and *FASA* eliminate, with minor exceptions, the requirement for "certified cost and pricing data" under the *Truth in Negotiations Act* (*TINA*). This has been heralded as a blessing for industry, but has caused problems for contracting officers who are mandated to determine "fair and reasonable" cost and price prior to award of contract. Specifically, there are instances in which firms have claimed "commercial item exemptions" from *TINA*, when not one single item has ever been sold to the general public; hence, there is little or no standard for determining the reasonableness of the price. Without *TINA* and cost analysis, the contracting officer may be awarding without solid factual benchmarks, standards, or measures of what is "fair and reasonable" (Yoder, 2003).

The Defense Acquisition Corps has increased education and training requirements for key positions such as for the Critical Acquisition Position (CAP). CAPs are the most senior positions in the defense acquisition workforce, including program executive offices, program managers, deputy program managers of MDAP

ACAT I defense acquisition programs and the program managers of significant non-MDAP ACAT programs. Maximizing program manager and contractor flexibility to make cost/performance tradeoffs without (unnecessary) higher-level permission is essential to achieving cost objectives. Therefore, the number of threshold items in program requirements documents and acquisition program baselines has been reduced. All of these changes add up to significant, albeit incremental, transformation of the DOD acquisition system.

The primary criticism of the acquisition process is that it is too complex, too slow, and too costly. It may also produce weapons that are irrelevant or "over-qualified" for the task at hand if the threat has changed by the time they are finally put in the field. Annual budget-cycle politics add to this mix; the continual purchase of weapons because they are good for congressional electoral districts irrespective of defense needs is wasteful. In addition, there is the fact-of-life adjustment of the 1990s; there was a procurement holiday which has resulted in increased maintenance costs for older weapons systems. The outcome is increased O&M budgets and a gap in the procurement budget that reaches into the tens of billions of dollars—a gap that will not be closed in the near future. Add to this mix the fact that almost 40% of the federal and defense acquisition community will be eligible to retire in 2008. This would seem to leave a problem of immense magnitude. However, as we have documented above, these are not new problems.

The defense acquisition process has almost always appeared to be broken, but the irony of this is that the products it produces are among the best in the world. That is why Marines went into battle in their fathers' helicopters and some pilots flew their grandfathers' bombers over Iraq, why the main US battle tank has been superior to anything on the field for over a decade. Moreover, this broken process engineered and deployed missile-firing drone aircraft while the war in Afghanistan was in progress. The system can and has reacted quickly. America, the society of disposables, fast food, and microwave cuisine has also produced weaponry that is

excellent and durable. The process is cumbersome, overly expensive, complicated and highly political, but it does work.

In the best of worlds, DOD would acquire weapons assets in an environment of stable funding and management. Acquisition process reform over the past ten years has sought to provide a more stable environment in which to acquire better, more efficient weapons. However, the era following the end of the Cold War and the advent of the War on Terror has made acquisition more difficult. Further, reforms of acquisition and PPBES processes have created their own turbulence as change has been continuous. At times, it is difficult for program managers and others involved in the DOD acquisition process to stay up-to-date on the status of change because one wave of reform spills over into the next. Continuous improvement of weapons acquisition budget estimation, execution and management has and will continue to present a challenge to all participants in the process. The pattern of continuous reform of acquisition and budgeting for weapons systems over the past several decades is a fact of life. Why should anyone expect the future to be different? We attempt to answer this question in the next section of this report.

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Acquisition Process and Resource Management Reform

Reform of the entirety of DOD budget, financial management, and acquisition decision-making systems and business processes is a huge and ambitious topic to analyze, much less to accomplish. Our intent here is to advance our views on the practical underpinning for reform of defense resource, acquisition and business-process management. We argue the necessity for relying on capital and longer-term budgeting and resource-management methods, more stringent application of business-process reengineering, and increased use of markets and the private sector in moving from bureaucratic approaches toward a smarter system of organization and operation.

In any dialogue on the topic, we acknowledge that reform of DOD acquisition is not an easy task. Part of the problem is that so much reform has been attempted since the 1980s and that the results of these efforts have been mixed. To some extent, the dynamics of constant reform are part of the problem, and many recent changes have not been as successful as anticipated. As Dillard concluded:

> In the last three years, there has been a great deal of turbulence in U.S. defense acquisition policy. This has contributed to confusion within the acquisition workforce in terminology, major policy thrusts, and unclear implications of the changes. The new acquisition framework has added complexity, with more phases and delineations of activity, and both the number and level of decision reviews have been increased. Decision reviews are used as top management level project control gates, and are also a feature of centralized control within a bureaucracy. Although the current stated policy is to foster an environment supporting flexibility and innovation, the result is a continuous cycle of decision reviews. Program Managers may now have fewer resources to manage their programs as they spend much of their time, and budgets, managing the bureaucracy. Moreover, the implicit aspects of the still new model have not been fully realized, and may result in policy that actually lengthens programs—counter to goals of rapid transformation. The framework, and its associated requirements for senior level reviews, are opposed to the rapid and evolutionary policy espoused, and

> are counter to appropriate management strategies for a transformational era. (Dillard, 2005, p. 72; see also Dillard, 2004)

Other prominent acquisition policy experts summarized the challenge of reform as follows:

> The Department of Defense (DOD) [is in] a transformative period—leveraging emerging technologies to develop a net-centric warfare capability—while actively conducting military operations, throughout the spectrum of conflict, in support of the global war on terror. As a result, DOD is struggling to meet these competing requirements and reconcile [...] spending between traditional and new programs. Therefore, creating a more efficient acquisition system is a top priority. High-quality research in the area of acquisitions is necessary to [...] improve performance, reduce acquisition cycle times, and reduce the costs of DoD acquisitions, even as the Department confronts rapidly changing external and internal environments. (Gansler & Lucyshyn, 2005, p. 1)

In this section of the report, we outline and articulate our proposals for fundamental reform of defense budgeting, resource and acquisition management systems and decision processes—based on and integrated with many of the principles of enterprise organization and management developed largely in the private sector, along with capabilities-based analysis, decision-making and implementation. First, however, let us summarize why we and many others believe significant acquisition business process reform should be undertaken in DOD.

In our view, there is much that is wrong with DOD resource-decision processes and their relationship to the defense acquisition system. Too often PPBES and budgeting get in the way of efficient acquisition management. On its own, we believe that DOD resource management and acquisition decision processes are flawed to the extent that that they continuously propagate analytical and decision errors. They are excessively bureaucratic to the extent that they should be significantly redesigned, reengineered and de-bureaucratized. Many existing work processes should be replaced completely by new processes to enable improved capital asset investment analysis of alternatives, decision-making and execution in a much shorter period of time, involving far fewer participants, and in synchronicity with long-range planning and accrual budgeting principles that place

emphasis on measurement of performance and results rather than input and process variables. These two systems (PPBES and the DAS), as they operate presently, are an incredible and wasteful triumph of process over substance. In short, we believe that if we really want to run DOD like a business (i.e., using smart business practices), the best way to accomplish this goal is to adapt smart systems into DOD and federal government organizations, with careful attention to the differences in purpose between government and the private sector, and in part to further move much of what is in our view non-governmental work to private business—through increased devolution and redirection of essentially non-governmental functions into the private sector.

With respect to the need for reform of DOD acquisition, budgeting and related processes, we are not alone in rendering the conclusion that such action is needed. Then Acting Deputy Secretary of Defense Gordon England explained to the Senate Armed Services Committee, (2005), "the entire acquisition structure within the Department of Defense needs to be reexamined and in great detail […] there is growing and deep concern about the acquisition process within the Department of Defense and in the Committee" (DAPA Panel, 2006, p. 3). In addition, the Senate committee reported:

> The committee is concerned that the current Defense Acquisition Management Framework is not appropriately developing realistic and achievable requirements within integrated architectures for major weapons systems based on current technology, forecasted schedules and available funding [...] The committee is […] concerned that problems with organization structure, shortfalls in acquisition workforce capabilities, and personnel instability continue to undermine the performance of major weapons systems programs […] Problems occur because Department of Defense's weapon programs do not capture early on the requisite knowledge that is needed to efficiently and effectively manage program risks […] The committee believes that one answer can be found in the inability of the Department to address the budget and program stability issues. […] Funding and requirements instability continue to drive up costs and delays the eventual fielding of new systems. (US Senate, 2005, p. 341-355)

A detailed study of the DAS by a select panel of experts (DAPA Panel, 2006) tasked by Deputy Defense Secretary England in June 2005 came up with similar conclusions. In his tasking letter England wrote, “Simplicity is desirable […] Restructuring acquisition is critical and essential” (England, 2005). The DAPA Panel reviewed over 1,500 documents to establish a baseline of previous recommendations, held open meetings and maintained a public web site to obtain public input, heard from 107 experts, received over 170 hours of briefings, and surveyed over 130 government and industry acquisition professionals (DAPA Panel, 2006, p. 7). In December 2006, the DAPA Panel reported that the primary problem faced by acquisition executives and managers was program and funding instability, which is caused by the forces we have identified in this text. The Panel reached the following conclusions:

- The acquisition system must deal with external instability, a changing security environment and challenging national issues.
- The DoD management model is based on lack of trust—oversight is preferred to accountability.
- Oversight is complex; it is program-focused—not process-focused.
- Complex acquisition processes do not promote success—they increase cost and schedule.
- DoD elects short-term savings and flexibility at the expense of long-term cost increases.
- Because [...] major processes are not well integrated:
    - We have an unrecognized, government-induced and long-standing cycle of instability
    - which causes unpredictability in costs, schedule, and performance
    - that ultimately results in development programs that span 15-20 years with substantial unit cost increases
    - leading to loss of confidence in DoD acquisition systems. (DAPA Panel, 2006, pp. 9, 12)

With respect to improving the performance of the system, the DAPA Panel recommended the following and organized its recommendations into the seven categories listed below:

Organization

- Realign authority, accountability and responsibility at the appropriate level and streamline the acquisition oversight process.

Workforce

- Rebuild and value the acquisition workforce and incentivize leadership.

Budget

- Transform the budgeting process and establish a distinct Acquisition Stabilization Account to add oversight throughout the process.

Requirements—Process

- Replace JCIDS with COCOM-led requirements procedures in Services, and DOD agencies must compete to provide solutions.

Requirements—Management and Operational Test

- Add an “operationally acceptable” test evaluation category. Give program managers explicit authority to defer requirements

Acquisition—Strategy

- Shift to time-certain development procedures
- Adopt a risk-based source selection process

Industry

- Overcome the consequences of reduced demand by sharing long-range plans and restructuring competitions for new

> programs with the goal of motivating industry investments in future technology and performance on current programs. (DAPA Panel, 2006, p. 14)

Specifically, related to budgeting for acquisition the Panel recommended the following:

- Enhance the budget process by establishing a distinct Acquisition Stabilization Account for all post Milestone B programs. Add practical Management Reserve at the Service level.
- Establish a separate Acquisition Stabilization account to mitigate the tendency to stretch programs due to shortfalls in DoD accounts that ultimately increase the total cost of programs.
- Create a Management Reserve in this account by holding termination liability at the Service level.
- Adjust program estimates to high confidence when programs are base-lined in this account. (DAPA Panel, 2006, p. 17)

The distinct Acquisition Stabilization Account and Management Reserve recommended by the DAPA Panel constitutes, in our view, a step towards establishing both a capital budget and a capital reserve account within the CAF for DOD, as we recommend. It is important to recognize that while R&D, design and prototyping, production and other contracted work would be paid for from the CAF under our proposed reform, the CAF would provide such funding from separate internal accounts based upon the legal requirements imbedded in statutory law for separation of appropriations by type. However, we would suggest that DOD make the case to Congress to fund a capital reserve account within the CAF to accommodate change more quickly than does the annual budget process and to provide additional stability to DOD acquisition and contractor defense firms.

The conclusions developed by the DAPA Panel as rendered in its December 7, 2006, report were carried forward subsequently in July 2007, when (in response to a reporting requirement from the 2007 *Defense Authorization Act* sponsored by Senator John Warner (R -VA)) Kenneth Krieg, USD AT&L at the time, submitted the Secretary of Defense's *Defense Acquisition Transformation Report to Congress*.

This report formally asked Congress to enact a number of the recommendations indicated above from the 2006 DAPA Panel report into law as part of the FY 2008 *National Defense Authorization Act* (Defense Acquisition Transformation Report to Congress, 2007).

Beyond capital budgeting, as is clear from the conclusion reached by the DAPA Panel and recommendations to Congress made by the USD AT&L, business process redesign and reengineering are key to successful acquisition process and related resource management reform.

Business Process Reengineering: The Basics

A major component of any DOD acquisition reform strategy will require very stringent application of business process reengineering; this will result in the implementation of new and more efficient organizational processes based on organizational redesign of roles and responsibilities and how work is performed. However, before we indicate specifically how business redesign and process reengineering would be applied in DOD, let us briefly review what this technique entails and how it is applied.

Business process reengineering is an attractive initiative to public management reformers because reducing costs, cutting service production cycle-time and improving quality and productivity so often depend on moving beyond the constraints imposed by traditional, highly bureaucratic ways of performing work. Business process redesign and reengineering endeavor to establish efficient work processes. At the most fundamental level, reengineering concentrates on “starting over” rather than on trying to “fix” existing process problems with marginal or incremental “band-aid” solutions. Barzelay has characterized traditional types of marginal organizational reform as "paving the cow paths" (1992). In contrast, business process reengineering requires decision-makers concentrate on processes and not functions and positions in organizational hierarchies. The goals of reengineering are increased customer satisfaction and improvement in service

quality, combined with greater efficiency as measured primarily by reduced cycle-time and cost. Reengineering takes advantage to the greatest extent of computer and other information technologies. It requires repeated pilot testing of alternatives proposed to replace existing work processes prior to implementation of new systems and processes.

Only a brief attempt is made here to define reengineering as much has been written about it, most notably by Hammer and Champy (Hammer & Champy, 1993; Hammer & Stanton, 1995; Hammer, 1996). Reengineering is a top-down process wherein the organization, typically driven by resource constraints and competitive market pressures, attempts to serve its customers better by reducing work process cycle-time which, in turn, can reduce costs either in the short- or long-term.

Reengineering does not attempt to modify existing processes. Rather, it replaces existing processes with more efficient ways of doing business. Critical to accomplishing the goals of reengineering is increased use of computer and other information technologies to allow fewer employees to do the work formerly performed by more people. Reengineering alters work flow and sequential or reciprocal task-dependent relationships, short-cutting older processes—in part, through substituting computer-assisted data gathering, analysis, decision and management for manual human labor. However, the key is not so much replacing people with technology as much as it is working smarter, eliminating unnecessary, duplicative, paper-heavy work methods.

Not surprisingly, reengineering can result in organizational redesign, e.g., flattening or “delayering” as fewer lower and mid-management employees are needed to do the same or better work after processes have been reengineered. This enables redeployment of some personnel to direct customer service, depending on demand, ability, aptitude and training. Essential to reengineering is investment in education and training of staff to operate new processes effectively. Reengineering success examples are numerous (Hammer & Champy, 1993, pp. 150-199; Hammer & Stanton, 1995, pp. 204-227, 254-273; Hammer, 1996, pp. 174-190) and often

show reduction of work process steps of 70 to 90 percent, cuts in cycle-time of 60 to 80 percent and reduction of costs from 20 to 80 percent. In other words, reengineering is intended to make quantum rather than marginal performance improvements.

The process of reengineering involves a commitment by executives to fully support the initiative, the selection and prioritization of processes to be reengineered, assignment of project responsibility to work teams, selection of work team members representing older processes and many or all of the stakeholders in the process outcomes, assignment of team leadership and reporting/liaison responsibilities, analysis of existing processes, development of alternatives to the status quo, pilot testing and evaluation of alternatives tested, integration of trial-and-error lessons in redevelopment of alternatives, refinement of the best alternative and, finally, implementation of the new process and discontinuance of that which it replaces.

Some simultaneous operation of old and new processes may be necessary temporarily. Selection and tasking of work teams is critical to achieving desired results. Continuity of executive support for testing and insulation for failure is essential. Some or many errors should be expected in attempting to define new processes. Full commitment of resources to see the reengineering initiative through also is critical. Staff time, technological support and funding must be provided as needed by process action teams. Furthermore, support for the effort must be virtually open-ended in terms of time schedule—i.e., teams must be free to work on alternatives until they have succeeded. Setting artificial end-dates by which process must be reengineered is not productive. Instead, teams should be asked to work until they “get it right.”

The bottom line for evaluating the success of reengineering is improved customer satisfaction (i.e., results). Cycle-time and cost reduction are not ends in themselves. Rather, they are the results of better work processes. Metrics are critical to determining whether reengineering is successful and, consequently, methods for

evaluating results and comparing them to those achieved under previously used processes have to be built into the reengineering effort. Without a means for measuring quantitatively and qualitatively the improvement in service, reengineering is virtually pointless. There are simpler ways to cut costs if this is the only objective. This means that results indices must be identified, databases and collection procedures designed and constructed; data must be gathered, analyzed and compared. Accounting data must be related to results measures to permit cost analysis as well as consumer response to process alternatives whose costs differ. Typically, different parts of the customer base will prefer different mixes of service quality and cost. Reengineering must attempt to accommodate such preferences, as this is the objective of change.

Proponents of reengineering recognize that many organizational work flows, job designs, control mechanisms, and structures are either superfluous or obsolete. Reengineering processes, accompanied by restructuring and downsizing, intend to improve administrative performance and, by slimming the organizational bureaucracy, save money. As Hammer explains:

> It is time to stop paving the cow paths. Instead of embedding outdated processes in silicon and software, we should obliterate them and start over. We should reengineer our [organizations]; use the power of modern information processing technology to radically redesign our [...] processes in order achieve dramatic improvements in their performance [...] We cannot achieve breakthroughs in performance merely by cutting fat or automating existing processes. Rather we must challenge the old assumptions and shed old rules. (Hammer, 1990, pp. 104, 107)

Application of System Redesign and Business Process Reengineering to DoD Acquisition

Rigorous business process reengineering could be applied in DOD to the extent that much of the work and many of the steps in the current acquisition decision process would be eliminated, along with the need for the staffs, both civilian and military, that perform this work. This approach assumes than much of the work performed in the DOD acquisition process may be replaced by the application of IT

or can be eliminated because this work adds no value relative to planning, decision-making or program execution (Jones & Thompson, 2007).

This is a somewhat harsh indictment of the current process; however, we believe our assumption about the need to eliminate many of work steps can and should be accomplished. Further, we assert that as a result of installation of smart IT systems and elimination of duplicative and unnecessary work, the reduction of cycle-time for decision-making and execution will result in substantial increases in productivity and output and reduction of cycle-time—from the request for proposal to the fielding of the system; at the same time, such reduction will increase the quality of decisions and products and, as a result, reduce acquisition costs dramatically.

Such an outcome is easy to prescribe but not so easy to implement. It is easier to define in general terms what work should remain and what a redesigned and reengineered process would look like than it is to list what would disappear as a result of radical process reengineering. Essentially, what should remain is the role of the central decision-makers with whom the responsibility for acquisition capabilities and requirements determination, analysis and decision-making rests, e.g., the USD AT&L, the acquisition chiefs in each of the MILDEPS, the MILDEPS combatant commanders, and the JCS. Most importantly, the responsibility to manage programs assigned to program managers should be matched by authority, with fewer accountability reviews and less oversight, to manage the programs for which they are responsible from a total systems approach—including full integration of lifecycle analytical methods.

The challenge to the overall DAS is that the short-term needs of the warfighter commanders have to be balanced against the medium and longer-term demands of military departments and services for recapitalization. To accomplish this, warfighter requirements for capability have to be articulated by the combatant commanders (COCOMs) and integrated quickly into programs and budgets. In doing so, the COCOMs must address the issue of interoperability, whether it is required or not. Interoperability is needed in the medium- and long-term due to the necessity

both for satisfactory joint warfighting operations and for staying within budget constraints. Thus, the DAS has to allow multiple lines of acquisition and procurement to operate simultaneously to meet short-, medium- and longer-term needs (Dillard, 2007). For example, as Humvee vehicles in Iraq and Afghanistan have been "armored up" for the Army, Marines, Special Forces and other users, the Army simultaneously initiated buying a new and better armored vehicle (the Mine Resistant Ambush Protected vehicle or MRAP), and is in the process of designing and buying a new light armored vehicle from Textron corporation (the Peacekeeper II) to deploy in the battlefield of the future.

While it is axiomatic to say that the warfighters' short-term needs must be met and, therefore, the combatant commanders have to play a potent role in the capabilities/requirements proposal process, longer-term recapitalizations cannot ever be ignored. Thus, in setting requirements and responding to contingencies as they emerge, both shorter- and longer-term capabilities have to be balanced against each other. The input from the COCOMs has to come up from the military departments and services, as do all proposals for new acquisition programs. On the other hand, the role of the MILDEP acquisition executives and, ultimately, the USD AT&L is to assess whether longer-range needs are balanced with what the COCOMs want. And the role of JCS is to insure interoperability to the extent possible.

This is essentially how the DOD acquisition system works presently, and the reform we suggest would not alter the basic structure of this overall program-proposal and decision-making process. However, we believe strongly that the overall process can and should be simplified and streamlined significantly. In a redesigned acquisition process, decision-makers would be assisted by smaller staffs to perform analysis. When we say smaller, we mean on the order of perhaps a dozen to twenty total staff persons in each office. Using the best and brightest minds, and IT and other tools of modern technology, these staffs would perform virtually all of the analysis of system requirements, planning, performance specifications, presentation

of options to decision-makers and the other tasks leading to the actual contracting for RDT&E and acquisition. Gone would be the many offices and staffs that now perform such analysis, e.g., for preparation of the POM.

In the Navy, this would result in the complete elimination of N81, for example. Staffs that presently perform program and project planning in and around the Pentagon and in Navy systems commands that are not involved in program execution would be reduced. The only duplication of effort in analysis of capability requirements would be between the small staffs of the USD AT&L and each of the staffs of the individual Secretariats and of the MILDEPS. In turn, as is the case presently, the MILDEPS would be responsible for input from the warfighting commands, although such input also would continue to flow to the Joint staff. In this regard, the JCIDS process, as it operates presently (or is supposed to operate) would be eliminated. This, however, would not relieve the JCS staff from conducting interoperability and jointness review for ACAT I programs. This function should remain a responsibility of the Joint staff.

Under such reform, what would happen to the requirements to build the FYDP and the POM? Under this reform approach, there would be no FYDP because it is unneeded, always out of date and virtually useless for the purposes it was designed to meet in the 1960s under SECDEF Robert McNamara. However, as we indicate in this report, there would be a capital budget schedule to structure capital asset planning. Additionally, the POM drill that repeatedly rebuilds the defense program assets would disappear as unnecessary—because it is unnecessary to constantly rebuild a known base of assets to be acquired. As with zero-base budgeting, the POM "build it from the bottom all the way to the top" exercise is a complete waste of time and effort. All that really matters in the POM build are the decisions about new starts. The base will take care of itself on auto-pilot at the insistence of the MILDEPS, at least until it reaches Congress. As noted earlier, the PPBES process as it operates now would be discarded entirely, replaced by a process of long-range budgeting, and program and budget execution.

As for the acquisition planning and decision process, all work that is not involved in program execution would be performed by the staffs of the USD AT&L, Joint staff and the MILDEP secretariats and military side of the departments, but by far fewer staff with far fewer reviews by succession of committees. As one former senior program manager told us, "If you want to get a decision in the Pentagon, don't try to do it by committee. Someone has to be responsible for decisions and held accountable accordingly."

One of the ways to streamline the DAS process is to eliminate duplicative reviews of program proposals by successive committees that tend to ask the same questions but cannot resist the proclivity to add to program complexity by requesting new and previously non-existent requirements to weapons platforms and systems. Often such add-ons appear to be motivated by the desire of military officers to enhance their careers through recommendation of additional requirements as a "career accomplishment" rather than based on evidence that add-ons are essential to mission performance. The cost of successive add-ons is increased program and budget turbulence and instability, plus a lot of additional work to accommodate or reject the proposed change by program sponsors.

Another factor that inevitably slows down system acquisition analysis and decision-making is the competition and sometimes strong disagreement between different parts of the MILDEPS (e.g., between OPNAV and systems commands in the Navy), and within organizations—including systems commands. One military program manager we interviewed said, "I knew politics would be a major part of this job but I thought the source of problems would be Congress [...] but I spend much more time 'politicking' to keep my program alive within my own [systems] command and with OPNAV than with Congress by far." He stressed that he had to obtain multiple approvals even for "minor decisions I should be able to make myself" from multiple levels within his systems command and in OPNAV, which slowed down the progress of his program and which made it more difficult to keep it on schedule and, where modifications were requested, within cost.

Another part of the problem as we see it is that in the current system, DOD asks too much of contractors relative to their incentive to take work in the first place, and perform well on contracts once they are awarded. We address this issue at the conclusion of this section.

An Example of a Simplified Acquisition Process

To gain perspective on proposals for simplification, redesign and reengineering opportunities, we may observe first that the acquisition process may be divided into four basic stages: concept and technology development, system development and demonstration, production and deployment, and operations and support (sustainment).

Second, we observe that the questions that have to be answered to acquire a weapons platform or system are relatively simple in the abstract: (1) What does the entity responsible for acquiring an asset want, and why? (2) How does the intended user of the asset want to use it? (3) What does the asset need to do in terms of performance? (Dillard, 2007). (4) How much money do we have to acquire the asset? Answering these basic questions is not nearly as easy as asking them.

Third, the participant roles in the process and functions to be performed have remained relatively the same (but have become much more complex) since the beginning of the nation. Generally speaking, these roles and functions are performed in nine sequential steps: (1) some entity identifies a capability request; (2) the capability identified has to be validated initially as a legitimate requirement; (3) a weapons platform or weapons system (e.g., equipment) has to be designed to meet the validated capability requirement; (4) DOD contracts for development, test and evaluation, which is intended to and often does lead to design improvements; this work is performed by firms that want to compete for the right to produce and sell the asset to the government; (5) the acquisition of the asset has to be planned (programmed in DOD terms) and then proposed in the defense budget sent to Congress by the President, and then Congress has to appropriate money to buy the

asset; (6) DOD performs the role of buyer from the private sector using myriad management tools for soliciting initial proposals (RFPs), evaluating bids and eventually selecting of the supplier(s). It then contracts for the R&D, prototypes and other work required to develop the prototype; (7) DOD evaluates the asset and decides whether to move forward in to full-scale production; (8) the builder/producer must determine how best to manufacture the asset and supply it to DOD within a highly comprehensive and typically tight set of constraints over design, cost, schedule etc.; (9) assets are delivered to DOD and provided (deployed) to the user, i.e., the warfighters.

The components of the acquisition process that we point to as candidates for redesign and reengineering cut across all of these functional stages identified above, although we give less attention to the user phase. Still, we do suggest several new proposals with respect to fielding of weapons systems, as we indicate subsequently. We envision a significantly reengineered and simplified acquisition decision and execution process. However, as experienced observers will note, some of what we advocate is already implemented in DOD, but perhaps not quite in the way we envision it in the model that follows. To illustrate what we advocate, we provide as an example a simplified version (organized into seven main phases) of what a redesigned and reengineered acquisition process would consist.

The Jones-McCaffery Model for Acquisition System Redesign and Reengineering

1. The initial phase is proposal of a desired capability by the military departments and services. This proposal could come from a warfighter command or, more centrally, from the military chiefs (e.g., from OPNAV or elsewhere in the Navy). The staff of the MILDEP acquisition secretariat would comprehensively review and analyze the proposal; then, the service assistant secretary for acquisition would make a decision on whether to proceed with its development (advanced development latter phase). Information on requirements from the COCOMs (where available) would assist in the analysis of the proposed systems so that, ideally,

decision-makers are assured to the extent possible that the proposed systems meet a real warfighter need.

This first phase assumes implicitly that the military services have a clear idea of what they want, even at the operational capabilities level. However, we note that a number of experienced acquisition practitioners have identified the requirements process as one of the weaknesses of defense acquisition. As one seasoned former program manager put it, "In my opinion, this [inability to define requirements adequately] is due primarily to: (a) a chronic deficiency of human capital, (b) a dysfunctional and complicated bureaucratic structure, and (c) a perpetual desire to mix needs with prescribed solutions." Another highly experienced critic put it more bluntly, "Do you assume that the war fighter or the military departments and services really know what they want?"

We acknowledge the potential and real weaknesses that exist presently in defining what asset should be acquired for the warfighter. Our first response is that the shift to identifying and specifying the capability desired rather than the specifics of asset performance requirements that has taken place in DOD as a result of transformation over the past five years or so is a step in the right direction to improve the requirements-setting process. Secondly, we propose a check should exist in the second phase of our redesigned process model to weed out poorly defined capability requests and requirements proposals. This would be (and is now) part of the responsibility initially of the MILDEP acquisition professionals and then of the USD AT&L and JCS. This is not a significant departure from how business is performed presently. However, we wish to point to the statement of USD AT&L John Young, Jr. included below indicating that improvements are needed to state capabilities more clearly, to define requirement more carefully, and to kill-off bad proposals earlier in the process (Dillard, 2006).

2. The MILDEP request for the capability and a specific system to meet the capability requirement would be analyzed simultaneously and together by a combination of the staffs of the USD AT&L and the Joint Chiefs, with a single

recommendation issued together to USD AT&L for decision. The USD AT&L would decide on a "go or no go" basis to approve or disapprove the "capabilities and system request," and this decision would represent the choice of the Secretary of Defense, as is the case presently. No separate review by SECDEF would be made, except where the Secretary took the initiative to do so. It is presumed that some necessarily approximate design requirement and some specifications would be determined by this stage in the process. Still, many issues with respect to feasibility of design, engineering, technological feasibility and cost would inevitably remain to be resolved subsequently. However, we agree with Under Secretary Young in stressing that the culture of "just move it along" in initially approving the capability and requirement has to be changed. Too many asset proposals are approved for development by the MILDEPS, and this absence of discipline is as much a cultural phenomenon as it is a failure to perform work diligently. If the MILDEP culture endorses the "let's fly it up the flag pole and see who salutes" approach, then insufficient screening results in wasted time and energy as less desirable systems are assessed. This, in turn, takes time away from analysis and development of systems that are really needed. As Mr. Young put it, "troubled programs share common traits [...] programs were initiated with inadequate technology maturity and [without] an elementary understanding of the critical program development path." This type of error has to be eliminated, and such discipline will become increasingly necessary as money for DOD weapons acquisition declines (as it will inevitably do based on historical analysis of the peaks and valleys for defense funding).

3. Once a "capabilities and systems request" was approved by USD AT&L, the MILDEPS would request the private sector prepare and submit design and R&D proposals. The responses from private firms would include bids for their designs, including costs for meeting the required capability and system requirements. Again, this is not much different than what is done in acquisition and contracting presently, with the exception that no R&D would be assigned to government labs. All R&D would be done in the private sector. Notably different from current practice is that

competition for the right to produce would be open to US as well as non-US firms from selected foreign nations.

4. Then, first, the MILDEP program office, and second, a committee or board representing the combined staffs of the USD AT&L, the Joint Chiefs and the MILDEPS would review private-sector proposals, each of which would contain the design specifications determined by the private firms and the costs estimated to meet the requirement with a specific platform, system or equipment asset. The second step, the combined review which would include the JCS analysis of inoperability, would result in the recommendation to USD AT&L of one or more contractors for prototype production and related R&D, or that more bids be solicited if none of the bids are deemed satisfactory. Notably, this recommendation would be made by the MILDEP acquisition executive.

While the analysis performed during this phase would involve participants representing a number of stakeholders, the primary agent responsible for analysis would be the MILDEP staff. Still, the final *decision authority* to move forward on a system must rest *solely* with the USD AT&L. The USD AT&L and staff would assess the recommendation from the *single* (not multiple) combined committee and staff review of proposals and decide on which to accept and which to reject. Ultimately, in any organization, final decision authority and accountability for asset acquisition decision-making has to be assigned to one official. This principle is firmly imbedded in the lessons derived from effective corporate management in the private sector. Management by committee is not management at all. Rather, it is a recipe for error—just as is excessive and duplicative reviews of systems leading up to the point of decision. In this respect, DOD systems, structures and work processes are weak and wasteful. Too many duplicative reviews by too many entities are performed with the result that it takes longer to reach a decision.

5. The next step in the process would be preparing and issuing the contracts for prototype production, and for additional RDT&E where needed. The types of contracts used for prototyping, and later for full-scale production, would be

determined (as we explain elsewhere in this report) based on what is appropriate relative to the capability and system characteristics we identify. Both fixed and flexible price contracts would be used and, as is the case now, the tendency would be to use flexible and incentive-based contracts (with strict penalties for failure to perform within cost and time constraints written into the contract) for programs in which uncertainty is higher at the front-end of development (in complex systems for example). Then, as system designs and characteristics became known and the system moved toward and into production, the program office would move to fixed-price contracts, in which uncertainty was reduced. As is the case presently, after bid and award of contracts, most of the technical and financial risks involved from design through production are assumed by the private sector.

With respect to funding, RDT&E and the latter phases of design and then production would be paid for using appropriations made by Congress—nothing new here, as this is a Constitutional requirement. However, because in this model we assume adoption of a capital budget by DOD, financing for acquisition would be provided from the capital investment fund, and the term of financing would depend on the needs of the government and the contractor. The primary objective of the CAF would be to stabilize the funding and budget process for weapons and system development, acquisition and deployment. Money to fund the DOD CAF would be appropriated by Congress as is the case presently, e.g., by different types of appropriation (i.e., different colors of money) through the regular appropriation process. However, money thus appropriated would be deposited into different accounts within the CAF according to color-of-money requirements and restrictions provided by Congress. Again, this would not cause Congress to have to make any change in the way it appropriates money for DOD acquisition.

With respect to political considerations, it is highly evident to us that CAF would work best for DOD if Congress would provide funding with maximum flexibility, e.g., with "no-year" end dates, extended time for obligation, higher thresholds for DOD reprogramming without approval from Congress, and, ideally, if Congress

would delegate some between-appropriation transfer authority to DOD, subject to reporting to but not approval by Congress. We might argue the advantages to Congress of adopting accrual budgeting (which would provide multiple-year and forward funding for acquisition to replace the annual appropriations budget that Congress prefers), but we acknowledge that Congress is unlikely to ever accept this approach to budgeting, although it is commonplace in the private sector. This reluctance stems from the fact, regrettable at times, that Congress tends to be more concerned with where money is spent and who gets DOD contracts for production of warfare assets than it is with the efficiency of the DOD acquisition process, the performance of program management, or the productivity of the private sector. However, if Congress genuinely wants DOD to provide stable financing for acquisition, then members must realize that DOD needs help from them to do so (see more on this area under the politics of reform section of this report).

The CAF approach would require a very different system of financing and accounting for appropriation by DOD. As we have recommended, DOD would use a longer-term budget and resource management system in which financial obligations for acquiring assets would be managed and accounted for on a full accrual basis, using a separate capital budget to support the financing of systems acquisition. For this to work, the period for obligation should be extended for all money deposited into the CAF, as we have proposed. Under the most desirable circumstances, DOD would request that Congress appropriate what constitute capital outlay appropriations (to buy long-lived assets) on a "no year" basis as explained above, i.e., with no end-year specified. This would enable DOD CAF managers to provide much more stability to program managers for system development, acquisition and deployment than is the case at present.

6. The private sector would be required to perform additional design work, if necessary, to produce the final asset prototype (with all of the technical and performance attributes intended for the asset) once put into full-scale production. Further, R&D would be done by private firms with government oversight—both in

terms of performance and cost—in the contractor's production facilities. This is similar to the current process often employed, but would be conducted with more emphasis on product performance and schedule in addition to cost in order to meet the required program capability requirement. The private sector would supply DOD with prototype models ready, in basic form at least, to test and evaluate realistically for fielding. This final prototype would be jointly and simultaneously tested by the contractor and the PM team on behalf of DOD. Under the conditions of the contract, DOD would have the option to accept or reject the asset. To reemphasize the point, the primary responsibility for satisfying DOD's role and responsibility in test and evaluation would be performed by the MILDEPS program management staff (herein referred to as the contract team), as is much the case now, but with oversight by a single representative from the combined USD AT&L and Joint staff review committee. The purpose of this oversight is to provide another "back-up" check to balance the system in evaluating the prototype. Thus, at this point, a combined member-evaluation contract team (consisting of the PM and staff, the USD AT&L, JCS and the contractor) would work together in one place at one time to evaluate the asset.

We propose, in addition, contracting for multiple competing prototypes along with evaluation through collaboration of government and industry teams. This is a component of reform that has received strong support at the DOD executive level. In a memorandum to the Secretaries of the Military Departments, the Chairman of the JCS, Commander of US Special Forces Command and Directors of Defense Agencies dated September 19, 2007, Acting USD AT&L John Young, Jr., wrote:

> Many troubled programs share common traits—the programs were initiated with inadequate technology maturity and an elementary understanding of the critical program development path. Specifically, program decisions were based largely on paper proposals that provided inadequate knowledge of technical risk and a weak foundation for estimating development and procurement cost. The Department must rectify these situations. Lessons of the past, and the recommendations of multiple reviews, including the Packard Commission report, emphasize the need for, and benefits of, quality prototyping. The Department needs to discover issues before the costly

> System Design and Development (SDD) phase. During SDD, large teams should be producing detailed manufacturing designs—not solving myriad technical issues. Government and industry teams must work together to demonstrate the key knowledge elements that can inform future development and budget decisions. To implement this approach, the Military Services and Defense Agencies will formulate all pending and future programs with acquisition strategies and funding that provide for two or more competing teams producing prototypes through Milestone (MS) B. Competing teams producing prototypes of key system elements will reduce technical risk, validate designs, validate cost estimates, evaluate manufacturing processes, and refine requirements. In total, this approach will also reduce time to fielding. Beyond these key merits, program strategies defined with multiple, competing prototypes provide a number of secondary benefits. First, these efforts exercise and develop government and industry management teams. Second, the prototyping efforts provide and opportunity to develop and enhance system engineering skills. Third, the programs provide a method to exercise and retain certain critical core engineering skills in the government and our industrial base [...] Based on these considerations, all acquisition strategies requiring USD(AT&L) approval must be formulated to include competitive, technically mature prototyping through MS B. (Young, 2007, p. 1)

We presume that, under our proposal, some bids and, consequently, prototypes would come from non-US firms (see our recommendations on the *Buy America Act* and similar laws that have been passed by Congress which would have to be either repealed or modified to permit non-US firms to participate as we recommend).

At this point in the process, the PM-led contract team and all other DOD test and evaluation participants would be constrained to requesting only very minimal changes to the asset prototype produced by the private firm. Significantly, changes would be held to a strict cost constraint based on a specified percentage of the projected per-unit cost of the asset once it entered full-scale production (best guess estimate of "should cost") and would only be approved if the contractor could complete minor modifications within 90 to 120 days. The MILDEP PM would have responsibility, assisted by the acquisition team, for testing (along with the contractor) any modifications allowed under the contract once the modified prototype was available for further test and evaluation. Once such T&E was completed, the PM would have sole authority to recommend to the MILDEP acquisition decision

authority and the USD AT&L whether to move to contracting for full-scale production. In this respect, we want to empower the PM beyond what is authorized within the existing DAS.

7. Once accepted by the PM, in consultation with his/her contract team, the contract to move into full-scale production would be awarded and the purchase funded. For this to happen quickly, simultaneous alignment of the DAS and the financing process is required—as we recommend under capital budgeting. With respect to final DOD decision authority, the USD AT&L would be required to approve the proposal for contracting for full-scale production. In addition, as Jacques Gansler has suggested, we would place the Assistant Secretary for Networks and Information Integration (N&II) under the USD AT&L (which would change the USD's title to IAT&L) "to emphasize the importance of information-centric systems, both for warfare and for infrastructure" (Gansler, 2007, p. 15). What we intend at this point is essentially direct contact between the PM and the USD AT&L or someone fully authorized and designated on his staff to give final approval. The role of the MILDEP acquisition decision authority would be to step in only to terminate a program. As one former senior program manager put it, "It is never too late to kill a program." And this dictum should apply to the full-scale production phase that follows final DOD approval for movement to full-scale production. Thus, stopping programs such as the infamous Navy A-12 aircraft or the Army Crusader should be regarded as the norm rather than the exception. When program failure is imminent, allowing the decision to terminate it to drag out for years simply wastes money and work effort that should be applied to programs for which the need is highly apparent.

The CAF would supply a stable base for funding production of a specified quantity of the asset. No changes in the design, engineering or technology of the asset would be permitted during the initial production run. While this to some extent deviates from the principles of continuous improvement and spiral acquisition, such control is necessary to protect the contractor from constant changes that, while they might be attractive to some DOD entities, in practice cause programs production

schedules to slip and increase costs beyond "should cost" government estimates, contractor estimates upon which bids were tendered, and the amount of funding made available for procurement—i.e., as evidenced by the perennial cost over-runs that Congress, GAO and even DOD deride (on assessing the risks of spiral development see Dillard & Ford, 2007).

8. The final phase of the redesigned acquisition process would be acceptance of the asset by the warfighter commands as meeting a required capability—through official certification by the appropriate COCOM (more than one COCOM could be involved in this certification). If the warfighter rejected an asset as not meeting capability requirements, or for reasons of poor or non-performance, DOD would have the authority—prescribed previously within full production contracts—to require a repayment (i.e., a penalty) to the Treasury of a portion of the production contract funding received by the contractor. This innovation to the overall acquisition system would require passage of new legislation by Congress authorizing such action by DOD. Also, it is clear that contractors would not support such legislation giving DOD so much leverage to reject deployed assets combined with a repayment penalty. However, if the goal of the acquisition and financing process is to field systems that meet warfighter needs, this type of legislation is needed to assure complete accountability for assets performance by contractors.

In addition, because contractor expertise typically is required in training and supervision of the use of the asset by warfighters in some instances, a separate contract would be entered into under circumstances on an as-needed basis. This contract would finance all or part of the cost of fielding and training with the clear requirement that all assets be fully supported by user manuals, other documentation and required software where applicable *prior to* the point of installation on existing platforms (in the case of system replacement or augmentation) or the fielding of new platforms or systems. Under the current financing and fielding process, RDT&E money cannot be used for anything beyond installation. Technically, training of the type that is often needed cannot be funded or provided by contractors out of RDT&E

or production appropriations. However, the advantage of the CAF is that funding stability for training and installation would be paid for from an existing pool of money for this purpose. This aspect of the CAF would require Congress to appropriate funds specifically for such types of contracts and contractor work.

How would the more rapid progress of weapons system RDT&E, development, and the rest of the process be tracked by USD AT&L, the Joint Staff and especially the MILDEP program management team? As we have explained in this report, this should be done using a single, integrated computer system for US AT&L and each of the MILDEPS. RDT&E would be performed by the private contractors as is, to a significant extent, the case presently.

We acknowledge fully that the redesigned and simplified process example outlined above is just that, an outline of one approach to a reengineered process. Additional analysis is needed to determine how the process would be implemented beyond what we have stipulated and what parts of the existing acquisition process would be molded to fit with the reengineered process. Without passage of new legislation by Congress, this last element of the reengineered process could not be implemented by DOD.

In evaluating the process outlined here, one could ask an obvious question: when there is so little incentive for private sector contractors to bid and perform work for DOD, wouldn't many of the elements we suggest further reduce this incentive? What would stimulate the five major US defense contractors to continue to want to maintain their defense lines of products and this part of their highly diversified businesses? Part of the answer to this question is greater reliance on competition in a global marketplace and more off-the-shelf buying by DOD. If large domestic contractor firms decided to abandon their defense business, we presume this would create opportunity for non-US contractors. Further, our proposal could create incentives for US defense firms to seek joint ventures with non-US firms. We address this topic in the last section of this report.

Contracts, Risk and Accommodation of Uncertainty

We are aware that there is a whole layer of contracting and contract management that must take place to cause private firms to bid to meet DOD RDT&E and asset acquisition needs.

In addressing the topic of contracting and instrumentation, we recognize that the complexity of contracting has to take into account that risk and uncertainty are related to the types of contracts used to acquire services and assets from the private sector (Thompson & Jones, 1986). We understand the principle that where risk and uncertainty are high, flexible price and incentive-type contracts are the best tools for getting the performance desired from contractors. In contrast, where risks are lower, because of less uncertainty, fixed-price contracts may be employed usefully.

As is the case under current practice, DOD has to be careful to apply the type of contract tools that are matched to the nature of the performance required under a contract. But this is only part of the equation. As explained by Thompson and Jones (1986), the choice of management control system used by DOD has to be matched to the nature of the market (competitive versus non-competitive), the nature of the asset to be acquired (homogeneous or heterogeneous; known versus unknown product characteristics), and the level of uncertainty and risk (low versus high) involved from R&D to production and eventual fielding of the assets. The advantages of fixed-price contracts are in most cases obvious, e.g., where COTS is applied to contract for purchase of an asset that already has been produced and is available for purchase without modification. Further, where flexible-price contracts are used to appropriately to accommodate uncertainty and risk, it is highly advantageous for PMs to build-in incentives to stimulate contractor performance, e.g., incentive bonuses. However, when this and similar approaches are used (and this approach has been employed very successfully by DOD), it is necessary to make sure that the incentive to perform on one part of the contract (e.g., producing an improved radar system on time) does not draw energy and attention away from achieving performance standards on the overall contract, e.g., for building a ship.

We also acknowledge neglect to some extent of logistics reform in our model, although we can make reference to the significant advances in spiral logistics and adoption of new systems. Such advances contribute to the task of meeting warfighter needs quickly and efficiently and should be applauded. We note in this regard how DOD has applied private-sector methods along with smart practices employed within DOD in reforming logistics processes and practices. Such advances reinforce the supposition that acquisition and related financial management reforms also can be modeled to an extent on private business practices, and that reform initiatives can succeed given appropriate design and implementation, sufficient executive support, and time to mature.

Additional Consequences of Redesign and Reengineering

In a significantly redesigned and reengineered acquisition process, several additional and major changes should be made as a consequence of reform. For example, as indicated, all government R&D laboratories that perform defense work would be eliminated because the work they perform can be obtained from private labs at lower cost. Likewise, some relatively unused or under-used government production facilities would be closed and terminated, e.g., Navy shipyards that never build ships and could not out-perform private yards in terms of price and schedule if required to operate on a non-subsidized basis and level playing field. In this regard, moving shipyards to mission funding and away from working capital funding, as has been done to some extent in the Navy, removes any incentives to increase productivity that might have been present before this change was made.

Additionally, some of the work performed by the MILDEP system commands would be redefined if more systems are bought off-the-shelf rather than made (contracted for) by these commands. This is not to conclude that all work performed by systems command is unnecessary. In fact, just the opposite is the case. We advocate that increased authority to match responsibility be provided to MILDEP program managers. Still, if DOD moves further towards a "buy" rather than "make" and a "pull" versus "push" acquisition and procurement strategy, as we suggest in

the last section of this report, then less work related to the "make" approach to acquisition would be available to be performed by system commands. As Gansler has put it, "The DoD must shift from a 'supply push' system to a 'demand pull' system based on 'sense and respond' and secure I.T. (for ‘total asset visibility’)" (Gansler, 2007, p. 26).

Smart Practice Examples

One approach to determining how to reform acquisition not explored in this text to any great extent is to review carefully what has worked with successful acquisition programs. One example is the Navy DDG-51 Arleigh Burke class AEGIS guided missile destroyer program. Originally designed to defend against Soviet aircraft, cruise missiles, and nuclear attack submarines, this higher-capability ship is used in high-threat areas to conduct anti-air, anti-submarine, anti-surface, and strike operations. The mission of the Arleigh Burke-class DDG-51 is to conduct sustained combat operations at sea, providing primary protection for Navy aircraft carriers and battle groups, as well as essential escort for Navy and Marine Corps amphibious forces and auxiliary ships, and to perform independent operations as necessary. These ships contain myriad offensive and defensive weapons designed to support maritime defense needs well into the 21st Century. The DDG 51 was the first Navy ship designed to incorporate shaping techniques to reduce radar cross-section—thus reducing detectability and the likelihood of being targeted by enemy weapons and sensors. DDG 51s were constructed in flights, allowing technological advances during construction (Global Security, 2007).

The DDG-51 acquisition program is a “smart practice” example of successful acquisition in that it was: (a) managed within cost, (b) came in on schedule, and (c) met warfighter requirements. Causal factors included: (a) experienced and consistent PM leadership, (b) good program management teamwork, (c) clear identification of requirements and what the platform was supposed to do, (d) good relations between the PM office and contractors, (e) a highly competent contractor, (f) realistic contracts, (h) relatively stable funding due to justification and defense of

the program by the PM and Navy to DOD and on the Hill. As one high-level Navy official who headed the PM office said about the program, "The DDG-51 acquisition was managed by a highly motivated and dedicated government-industry team with extremely clear lines of communication. The PM was charged with 'cradle to grave' management of entire system (ship and all the weapons on it). The DDG-51 was the first ship built from the keel up as an entirely integrated weapons system. In terms of cost and schedule, costs were well-contained from the beginning but the schedule for first ship was unrealistic and a contract modification was needed to deal with this problem. We made that happen with full involvement of the Secretariat, the Navy uniformed leadership and the Hill" (Greene, 2007). For another view on improving the system, see Appendix B that summarizes recommendations from a Rand Corporation study on reducing the costs of Navy shipbuilding.

In conclusion, we maintain that the DAS (as it functions presently) is not broken as much as it is abused by too much process, too many work steps and too many participants that force too many changes that increase costs and time to production and fielding. Steps in the process that do not add more value than cost need to be eliminated. Participation in the decision process purely for the sake of participation is wasteful and results in myriad negative consequences. When Deputy Secretary of Defense England called for simplification (England, 2007), for acquisition professionals, this meant—pure and simple—that some procedural steps and the philosophy of review, re-review and then re-review again had to be stopped. Some stakeholders who participate in the acquisition review and decision process need to be removed, and there is no reason to expect they will like this change.

As Wildavsky observed long ago, change in political and managerial decision processes inevitably produces winners and losers (Wildavsky, 1964). The continuous addition of new requirements to systems ultimately causes schedules to slip and costs to rise inordinately. In execution, PMs need greater stability. This means they need fewer changes in the programs they are managing, and they need to be able, on their own, to say no when late system add-ons are proposed or when

production problems emerge that cannot be corrected without incurring greater costs than benefits, e.g., as with the A-12 aircraft program. And while virtually all observers continue to applaud the value of continuous improvement through spiral acquisition, several questions always need to be addressed. First, how much will the proposed additional change add to cost and time to delivery? Second, is the integration of new and better technology (e.g., software for example) worth adding two years and $10 million to system costs? Third, how much change is too much for program managers and contractors to accommodate within cost and schedule constraints? Such questions are invariably linked with the greater stability in the acquisition system that all seem to favor, at least in principle.

These observations are not new, but now they need to be heeded; this is our primary point. As we have noted, the acquisition system isn't broken, but it is horribly abused for careerist, bureaucratic and private purposes. The result is that weapons and equipment take far too long to field and cost too much. Too often, fewer units are procured than are needed or products that have consumed considerable financial resources are never delivered to the warfighter.

We fully concede that the type of business process redesign and reengineering reform we advocate is unlikely, on its own, to correct much of what is deficient in DOD acquisition, contracting and financial management bureaucracy. We believe major changes are needed to improve what is done now internally within DOD and in concert with private-sector defense contractors. We assert that much work now done within government could and should be performed almost entirely outside of government. If one accepts the viability of this assertion, the questions then become, “How would these different approaches to reform be put into practice, and what are the implications of each in terms of changing existing DOD organization and business processes?” We have attempted to address a variety of issues in our analysis, but we accept criticism to the effect that implementing the type of change we advocate is more complicated and faces more hurdles than we have identified. Some of what we have recommended is under implementation, at

least in part, as we write. Other suggestions are beyond the range of political or organizational acceptability at present. Some of our proposals simply may be ill-advised. In defense, we assert that what we have tried to accomplish in analysis of acquisition process redesign, reengineering and simplification is provided to stimulate more thinking and dialogue on reform within and outside of DOD in the broader acquisition community of practice.

Finally, in recommending acquisition system redesign, process restructuring and reengineering, we want to go on record in stating that increased use of contractors to perform what are essentially government functions has gone too far and needs to be reduced dramatically. We advocate continued outsourcing of only what we and others deem to be essentially non-governmental work. Whether this means that government employment should increase correspondingly depends entirely on the continued need for the types of work that have been outsourced over the past decade and the politics of the budgetary process. Finally, with respect to acquisition reform, we recommend beyond redesign and reengineering of business processes an increased use of commercial off-the-shelf acquisition and procurement, relying more extensively than at present on an international marketplace instead of buying almost exclusively from domestic producers. To this topic we now turn our attention.

Globalization of Defense Acquisition

The Department of Defense should take greater advantage of the competitive dynamics of an international defense capital asset market in the same way that large firms in the private sector currently operate. As Jacques Gansler has explained:

> The Security world has changed dramatically—especially since 9/11/01 (geopolitically, technologically, threats, missions, warfighting, commercially, etc.) [...] However, the Defense Industrial Structure, the controlling policies, practices, laws, and the Services' budgets and "requirements" priorities have not been transformed to match the needs of this new world. (Gansler, 2007, p. 3)

We see the need for transition to a system in which, as noted, the product is the exclusive focus of decision effort. If one accepts the potential viability of this approach, the questions then become, "How would this be done? How would such a system operate, and what are the most important issues to be resolved in privatizing DOD weapons systems acquisition?" In our analysis, we take into account how contemporary business corporations operate, compete and, at times, cooperate presently in a global marketplace. We argue that to operate defense acquisition in a more business-like manner, decision-makers must understand the forces and market dynamics that have caused the corporate sector all over the world to adopt new forms of structure, behavior and performance. The Department of Defense needs to take advantage of competition in the emerging global marketplace. As Gansler has noted, there is now, "A 'globalized defense market' [to enable] technology transfer with allies and buying from the best—with proper risk-based concern regarding security" (Gansler, 2007, p. 12). What is needed in terms of the characteristics of the most desirable defense industrial base in the mid-21st Century is, among other things, an acquisition strategy that, "draws fully on commercial and global technologies" (Gansler, 2007, p. 11).

We assert that the key advantage of the global acquisition reform approach is the leverage inherent in the competitive dynamics of an international defense capital

asset market. The DOD should operate the same way as large firms in the private sector rather than relying on the system and process it uses now—which is, in essence, a gigantic, disconnected and inherently ineffective government bureaucracy. This structure resembles in form the Cold War-era, Soviet-style, long-range planning hierarchy in which *the process becomes the product*. We argue for a transition to a system in which the product is the focus of decision effort. As stated above, if one accepts the potential viability of this assertion, the questions then becomes, "How would this be done? How would such a system operate, and what are the most important issues to be resolved in privatizing DOD weapons systems acquisition?"

For DOD, the basic argument we advance is movement towards a "buy" rather than "make" acquisition strategy in most cases, and that the DOD should try to buy COTS weaponry, systems and equipment not just from US firms, but from the international marketplace. If most warfighting assets were bought in this way, the planning, building, contracting and execution of DOD tasks would be profoundly reduced, and the acquisition part of the organization would learn significant lessons Proper execution of this approach to eliminate non-value-added work so as to increase time devoted to high-value-added tasks is the key. Further, we advocate eliminating or outsourcing to the private sector all work that is not core governmental in kind. Indeed, we have indicated in this report why and how business process reform should be applied and roughly how much of the DOD acquisition bureaucracy should be cut. These conclusions and recommendations also apply to those we have made relative to the abandonment of PPBES and adoption of long-range capital and performance-based budgeting and resource management. Where steps and stages of the work process are eliminated from the existing, highly cumbersome, DOD resource-planning and budgeting processes, the workforce should be reduced accordingly.

We believe that DOD should consider the "buy vs. make" decision to a much more extensive degree than is the case presently. The DOD is, in fact, taking this

approach now in some instances. The Marine Corps bought the Harrier aircraft from the UK long ago. The Army is buying a helicopter from Australia; the Marine Corps acquired a fast-moving marine troop carrier vessel based on an existing Australian boat design, and members of Congress, including Senator John McCain (R-AZ) have suggested that the Air Force consider competition for refueling aircraft acquisition from Airbus in addition to Boeing. Many other examples abound which illustrate that the US military is buying equipment from foreign nations.

We would advocate that DOD further consider acquiring major warfighting assets such as strategic and tactical aircraft, missiles, ships, submarines, tanks, armored personnel carriers, trucks and the rest from overseas producers. As we have explained, DOD should take advantage of competition and even create such competition for supply in the international marketplace, much as it has done in the past in the US defense industry. And just as international corporations have moved production offshore, the US defense industry can move offshore (some already have done so) to take advantage of lower labor costs so as to compete for business from DOD. Further, our proposal would create an incentive for US defense firms to consider joint ventures with foreign firms.

If DOD can buy an existing platform or system that supplies the required capability from abroad at a lower cost, why should it continue to support what has become essentially monopolistic supply from US firms? Economic theory teaches us that monopolists eventually will set prices too high and will under-produce to exploit their monopoly position. Over the past fifteen or so years, the US defense industry has consolidated through merger and acquisition to the effect that three large firms dominate the market. They have argued that such strategy was and is necessary for them to survive and make a profit. We do not dispute these claims. However, we do dispute that DOD is better off buying weaponry and supporting systems and equipment from an oligopolistic market when we know from economics that such market structure results in overpricing and under-production.

The reform to have DOD acquire weapons systems from the international marketplace is not advanced in ignorance of the very real concerns related to the security risks associated with buying from foreign firms. Espionage is a concern both domestically and abroad, and the standard assumption is that the risks are higher abroad than at home. We think that achieving security anywhere in the world, given some obvious constraints in some nations, is a matter of how much is invested to achieve it and how it is managed so that all security risks are addressed. In our view, if the same security precautions are taken with all firms, foreign and domestic, then we do not see the differences between risks overall. This assumes that the US buys assets from allies who have a mutual stake in cooperative security arrangements in their regions of the world. For example, we do not expect that the US would buy medium- or long-range missiles from China, although it could. But could the US buy submarines or ships from South Korea? Most critics would answer that this is not possible, but is that necessarily the case if an asset produced by a foreign firm most cost-effectively met the capability requirements of the US military? The longer-term nature of the security relationships between nations will always govern who does business with whom in international markets.

A similar concern with our globalization approach is related to the consistent and long-term availability of spare parts and customer support, e.g., for software. Our concerns for software are mitigated by the view that all software for warfighting platforms and systems would have to be developed and supported by US firms, partly out of security requirements and partly so that competition for software development and upgrading would remain relatively open. Further, in our vision of how capital budgeting would operate on a longer-term and accrual basis, part of the way in which supply of spares is ensured is that PMs buy what is needed up-front with the purchase of the major weapons asset as part of the same contract. Would this not build-in intentional obsolescence sooner than needed if upgrades and new systems are developed by the supplying firm and as the system and equipment needs of the US military change? Would international buying create a situation in which needed upgrades could not be purchased at all? Our answer is that this

situation exists for DOD and the military presently. Indeed, we do not see how buying under conditions in which there is more competition to provoke innovation to meet US defense needs is greater than at present. If markets are allowed to work as they should, where demand exists, supply emerges to meet the demand. Will this always be the case? Not necessarily, nor is there any guarantee that requirements and capability will remain stable. In fact, the virtual assurance of change in the threat environment and, consequently, in capabilities required argues for the advantage of markets as adaptive mechanisms to lead technology development and availability in ways far better that any comprehensive, planned bureaucratic system can achieve.

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The Politics of Reform

We recall the statement by former Defense Secretary Dick Cheney (who presided over one of the largest cutbacks in weapons system programs, stopping more programs under development than had ever been done before—even after WWII and the Viet Nam war) (Jones & Bixler, 1992, pp. 129-171). When asked about the effects of such sweeping cuts, Cheney replied that it was not the responsibility of the Secretary of Defense to maintain the health and stability of the US defense industry. What was implicit in Cheney's observation is that the responsibility for advocating the cause of US contractors belongs to the contractors themselves, to their lobbyists and, ultimately, to those who represent their interests in Congress.

Critics of the view we advocate point out that Congress would not permit DOD to engage in wide-scale international shopping and buying, and they are right—if current law is any indication. For example, the *Buy America Act* prohibits much of the type of business with foreign firms that we indicate is needed. Further, as Gansler put it:

> [S]ignificant changes must be made in the ITAR, Export Controls, the Berry Amendment, [in rules governing] specialty metals, etc. to recognize the [need to operate in a] global defense market (with appropriate risk-based consideration of security and vulnerability concerns) [...] [and also to] remove barriers to commercial firms (e.g., CAS) and encourage their participation (via OTA, FAR Part 12, etc.). (Gansler, 2007, pp. 24, 27)

Thus, for DOD to implement our recommendations, some provisions of these and other laws and rules would have to be repealed or modified. Such change is no small order of business, and we acknowledge this fact. Congress is interested in keeping defense production at home to protect US labor interests and to supply jobs for their constituents—in part, because this behavior is what gets members elected and reelected. Further, members of Congress do not shirk from adding assets produced in their states or districts into defense appropriations whether DOD and

the military have asked and budgeted for these assets or not. Pork barreling in support of special interests is endemic in Congress to the extent that it is simply business as usual, and DOD is forced to go along with this practice—trading off what is needed badly for what is needed less or not at all so as to obtain support for its other budget priorities. Further, once a program has been forced into the defense budget in Congress, DOD and the military services are co-opted into supporting the program in the future. Thus, pork barreling and earmarking of funds for special purposes by Congress is something that DOD often supports, e.g., the V-22 aircraft. However, at the same time that Congress creates and protects American jobs and industry, it rails (assisted by GAO and other audit agents) against DOD for asset production cost over-runs, inefficiently low rates of production, failure to set priorities, long cycle-time for moving from requirement specification to production and fielding of warfighting assets, and general mismanagement and inefficiency. Our point in this regard is, as the cartoon character Pogo observed, "We have met the enemy, and he is us."

The acknowledged excesses of democratic decision-making notwithstanding, how long can or should the defense acquisition system, the US military and the US taxpayer, have to suffer the consequences of what, at best, is congressional and DOD waste of money and time in coercion of the process of buying warfighting assets, or at worst, behavior that probably is (or should be) criminal—literally—in violation of statutory and administrative law? The answer to this question, based on historical precedent, is that such practices have been normal in Congress from the 18th Century and the beginning of the union (McCaffery & Jones, 2001). Why then should we demand a change now? Our answer is that Congress and the DOD, as well as the rest of the federal government, need to put their money and support where their mouths are...in support of the incorporation of better business practices in DOD and elsewhere.

Members of Congress and the Executive branch speak loudly and often about the need for better business practices in DOD and government. This trend is not

new and did not originate under the initiative of former Secretary of Defense Donald Rumsfeld (all Rumsfeld did was try to implement the advice he and other SECDEFs had received). Antecedents may be found across the 20th Century in the recommendations of Hoover and various other Commissions and special "Blue Ribbon" reports (e.g., from the Grace Commission and the Packard Commission in the 1980s). Congress has passed innumerable DOD acquisition reform bills into law, in theory, to improve DOD efficiency and effectiveness. Congress has approved GPRA and GMRA and much similar legislation over the past 20 years, much of it aimed at improving government and DOD efficiency, cost consciousness and performance. In addition, GAO auditing is used by Congress with the goal of improving efficiency.

Our point is that elected and appointed officials appear to want to be perceived as desirous of stimulating efficiency, higher performance and productivity. They often speak of the need to "support our fighting forces in the field, particularly in time of war." However, these same officials then perform an about-face when it comes to authorization of defense programs and appropriation of defense spending authority. Apparently, to paraphrase the famous dictum of President Harry Truman, "the buck doesn't stop here." In terms of real accountability for matching word to deed, the buck doesn't stop anywhere in the federal government. As we have noted elsewhere, the federal budget and process is simultaneously over-controlled and out of control.

Why should we expect Congress to begin to better discipline itself? One reason is that Congress has, in fact, adopted self-denying legislation in the recent past, e.g., by creating and living with the consequences of the *Base Realignment and Closure* law (in which, at the end of a deliberate process of analysis, Congress must accept or reject a list of bases to be closed as an up or down vote, as it did in 1988,1991,1993,1995 and 2005). Might we expect similar behavior with respect to congressional review and voting in approval of defense acquisition programs and spending?

What is the likelihood that Congress would, for example, agree to vote without any changes, either for or against a capital budget proposal sent to it by the President as part of the DOD budget? This is precisely what we recommend be done. We suggest that if Congress is faced with an "all or nothing" choice, it will make the correct decision just as it has with *Base Realignment and Closure* (*BRAC*). We challenge Congress to pass legislation that creates authority for DOD to prepare and submit a capital budget and to approve accompanying legislation that requires a congressional vote for or against the acquisition capital budget package submitted to it by DOD without changes—exactly as is the case with *BRAC*.

Whether or not Congress is willing to do what we suggest is an open question. First, members would have to perceive that doing this would somehow provide them advantage in the political process. But, it has worked for *BRAC,* and in this process, all members have had to give up something to achieve the desire of the whole. Could the same be true for defense acquisition proposals?

A second area of resistance to the ideas for increased and open market competition for DOD business that must be anticipated is that which would emerge inevitably from American defense industry and organized labor. We mention this, but will not explore it to any extent. Suffice it to say that in a democratic political system, all parties have the right of access to the political process to defend their interests—even if those interests advocate less or no competition, oligopoly and higher versus lower labor costs. However, if the market were to dictate the answer to how warfighting assets are acquired by DOD, we may draw some conclusions by comparing the US defense industry to the US auto industry—i.e., that there may be a need to compete with and, in some cases, merge with international competitors to survive. And for organized labor, some jobs are better than no jobs.

Furthermore, DOD does not have to wait for Congress to change the annularity that drives how it authorizes, appropriates and performs oversight of its program approval and spending roles to begin to change and operate its reformed acquisition process, nor its multiyear budget processes. Congress is unlikely to

change its ways—especially those are based on sustaining options and the ability to assert priorities in resource allocation due to the incentives of the political system (Jones & Bixler, 1992). However, we argue that DOD can restructure and reengineer itself and adopt different business models and processes without any change in the congressional budget and oversight processes. Some minor adjustments from Congress would help, e.g., extending the obligation period for one-year appropriations to permit more realistic and efficient defense spending. However, overall, DOD alone can operate a long-range resource management system of its own design as long as it still translates the outputs into formats acceptable to Congress (as it does with annual appropriation legislation). DOD does this now with is existing acquisition, procurement and PPBES processes, e.g., in use of the milestone authority decision process and cross-walking from program to PEs to appropriations formats. We argue that it is incumbent on DOD leadership to demonstrate to Congress how the Department can operate more effectively and efficiently rather than to depend on congressional and GAO oversight to determine what smart systems and practices should be adopted and how they should be implemented.

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Conclusions

DOD could operate more efficiently (similar to multinational corporations), but it is hamstrung by bureaucratic inefficiency and multiple layers of over-lapping managerial and political control. From our perspective, the question of reform is one of how to structure and operate the organization so as to better match capability with mission.

In our view, the defense acquisition decision process is so excessively bureaucratic that, as with the PPBES process, it should be completely replaced by a new process. This new process would enable capital asset investment analysis of alternatives, decision-making and execution in a much shorter period of time, involving far fewer participants, and in synchronicity with a long-range planning and accrual budgeting process that places emphasis on performance rather than input and process variables. Both the DAS and PPBES processes, as they operate presently, are an incredible and wasteful triumph of process over substance. We believe that if we really intend to run DOD as a business (i.e., using smart business practices), the best way to accomplish this goal is, literally, to make it a business—through privatization of what we perceive as essentially non-governmental functions performed in the DOD acquisition process to the private sector. In our view, much of what the DOD acquisition and contracting bureaucracy does presently, sometimes well but sometimes very badly, could and should be performed entirely outside of government.

Part of the reform problem is alleged to be "politics"—i.e., having to operate under the constraints of a democratic political system. But, in fact, free and democratic political systems force compromise under a high degree of transparency. Democracy is, in fact, ugly and slow at times, but it beats other political systems in the long run in terms of mission and financing choice—but not production of the assets needed for national defense, e.g., China.

Here is where DOD has the obligation to lead political leaders in the right direction. But, what do we do instead? We organize and operate under the constraints of a highly inflexible, slow, torpid bureaucracy and blame the design and constraints on the political system, Yet, in fact, the problem lies far more with DOD structure and resistance to operating in markets as a free buyer and seller. And, in light of the purpose of this study, we fail in essence to take much or any advantage of the worldwide market in defense assets. To be sure, the problem of moving to more open buying of defense assets and of buying rather than making is both political and organizational. However, we argue that politics follows rather than leads in the definition of better structural/organizational fit to mission and market dynamics. The critical question is whether DOD leadership is willing to take the risks associated with competitive-market-oriented reform and privatization of non-core functions that require adoption of a radically different business model.

We also observe that where the production of privately consumed goods and services is concerned, private organizations are usually more efficient than state-owned enterprises. We assert that the same is true, for reasons explained by economics, for production of assets needed by DOD. Consequently, DOD should increase its reliance on the private sector worldwide in the acquisition of warfighting capital assets. Also, we noted that the reduced cost of information should increase the efficacy of markets relative to organizations and of non-governmental organizations relative to government. Improved communications technology, logistics, and IT all have reduced the cost of information, and have thus increased efficiency in the private sector. Value chain analysis is needed to make significant improvement in DOD acquisition and resource management, and implementation of the results of such analysis will require: implementation of more rigorous business process reengineering and reduction in the workforce size and scope of work demanded of the existing DOD acquisition and resource management bureaucracy. DOD can take advantage of the same methods used by private industry to increase the efficiency of acquisition, procurement, contracting and resource management;

we argue that it could use a more competitive market strategy and buy from the international marketplace to the greatest extent possible.

We also have asserted that there is little reason to question the pace of change and contingency in the cultures and environments within which DOD must operate, or the fact that DOD must respond to such change. We believe that not all such transformation will involve evolution towards organizational net centricity and replacement of bureaucracy with hyperarchy (where appropriate and feasible; see Jones & Thompson, 2007). More moderate adjustments to change are far more likely to be made before such bureaucratic organizations consider radical reformulation of their design, structure and modes of operating internally and in conjunction with other organizational entities. However, we have provided support for the argument that as a result of threat and other environmental changes and increased contingency, some movement towards hyperarchic design and netcentric operation is inevitable if DOD is to become more responsive and better able to accomplish its primary mission in the 21st Century. As threats change, so must the national defense organizations that develop the capabilities to meet the demands of these new environmental threats and international security circumstances.

We accept that comprehensive reform for both resource management systems (including PPBES) and the defense acquisition process may not be politically feasible presently; therefore, we advance a marginal adjustment strategy using capital budgeting and radical reengineering of DOD acquisition, procurement, contracting and resource management as the more feasible option until the political climate is ready for more comprehensive change. And, in fact, both capital budgeting and reengineering may be reevaluated at the same time as DOD continues to experiment with global and open market acquisition of COTS platforms, systems and equipment. In this regard, the internal DOD business process reforms we advance are complementary to what we advise for DOD externally: to take greater advantage of the global marketplace in acquiring military warfighting assets.

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